Egypl. Meteorological ligt.

Ministry of Public Works, Eypt. - Physical Department.

neport on the weather and state of the river.

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1934 - 1938.



# National Oceanic and Atmospheric Administration

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September 14, 1999

### Ministry of Public Works, Egypt—Physical Department

## REPORT ON THE WEATHER AND STATE OF THE RIVER FOR JANUARY 1934

#### The Weather

At the beginning of the month southerly winds prevailed and the weather was exceptionally warm, the 2nd—when the maximum temperature in Cairo was 28.4°C (84°F),—being the warmest January day since 1915. On the morning of the 3rd the winds veered to northwest and the weather became much cooler, while showers occurred in several localities. The rain was more wide-spread on the following day. In the early morning of the 5th the temperature at Siwa Oasis fell to 2°C below freezing point.

During the night of the 6th a shallow depression situated over Cyprus deepened, and rain fell along the Mediterranean coast of Egypt, the greatest amount recorded being 16 millimetres, at Rosetta. Showery weather continued in the north.

On the 9th a depression was situated off Benghazi, with a shallow low-pressure area extending north of Egypt. By the morning of the 11th the depression had reached Cyprus and had deepened. Strong northwest winds, reaching a velocity of 75 kilometres an hour at Alexandria, traversed Egypt, and the weather became much cooler. Showers were general throughout Lower Egypt. The weather improved after two days as the depression passed to northern Iraq.

Subsequent depressions traversing the eastern Mediterranean had less effect on the weather of Egypt, until the 20th, when a depression reached the coast of Palestine. Throughout Lower Egypt the weather was cool and showery, while on the next day northwesterly winds near the coast were strong, at times reaching gale force, and a velocity of 75 kilometres an hour was again registered at Alexandria. Conditions however rapidly improved.

On the 25th high pressure extended from the Balkans towards western Egypt, and cool fresh northeasterly winds traversed the country (the temperature at Gîza fell to within a degree of freezing point in the early morning of 26th), but by the 27th a small depression appeared near Benghazi causing southeasterly winds in Egypt, with an increase in temperature. Its passage along the coast on the following day resulted in mild khamsin conditions, and a large amount of dust was raised. The depression passed on the 29th, the winds veering to west and northwest, and there were light showers near the coast and in the Delta.

For the month as a whole the barometric pressure was above normal in Lower Egypt and below elsewhere. Except in the southern Sudan the mean temperature was everywhere above normal, but not by large amounts. In Egypt, apart from the heatwave in the first few days, when the temperature was 10° or 11°C above normal, the temperature rarely differed from the normal by more than 2 or 3°C. Rainfall in Egypt was on the whole below normal, but at Rosetta it amounted to 71 mms., compared with a normal of 48 mms. At Alexandria rain fell on 13 days, but the total was only 34 millimetres, the normal being 51 millimetres.

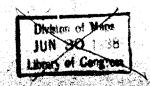


TABLE SHOWING THE DEPARTURES FROM NORMAL FOR JANUARY 1934

		BAROMETRIC PRESSURE.		TEMPERATURE.						1)	
DISTRICTS				MAXI	MUM.	MINIMUM.		MAX.+MIN./2.		RAINFALL	
1/18 CM (18		1933.	Pifference. from Normal	1933.	Difference from Normal.	1933.	Difference from Normal.	1933.	Difference from Normal.	1933.	Difference from Normal
		mb.	mb.	°c.	°C.	°C.	°C.	°C.	<u>°0.</u>	mm.	mm.
I. Mediterranean II. Middle Egypt III. Upper Egypt IV. North Sudan V. Red Sea * VI. Central Sudan VII. South Sudan	1 1 1 1	020·1 020·2 019·2 013·8 016·3 012·1 010·8	+1.8 +0.6 -0.2 -0.7 +0.7 -1.4 -0.6	18·8 19·4 23·5 32·7 27·3 34·0 35·1	+0·5 +0·6 +1·0 +1·8 +0·2 +0·5 -0·5	10·1 7·9 8·1 15·4 19·9 14·3 17·2	+0·4 +0·8 +0·4 +1·3 +0·1 +0·3 0·4	14·4 13·6 15·8 24·0 23·6 24·2 26·2	+0·4 +0·7 +0·7 +1·6 +0·2 +0·4 0·4	29 7 1 0 1 0	$ \begin{vmatrix} -11 \\ -3 \\ 0 \\ 0 \\ -6 \\ 0 \\ -1 \end{vmatrix} $

NOTE,-1,000 millibars is equivalent to 750.1 millimetres at 0°C, and mean gravity.

L. J. Sutton, Director, Meteorological Service.

#### State of the River.

Lake Albert at Butiaba fell 21 centimetres during the month. Its level on February 1st, 1934, was 50 centimetres above the normal and 46 centimetres below that of the corresponding day of last year.

The Bahr el Jebel at Juba remained steady throughout the month. The levels were a few centimetres above normal but on the average 22 cms. below those of last year.

The River Sobat at Nasser fell rather faster than normally throughout the month. The level which was 14 centimetres above normal at the beginning of the month being 26 cms. below normal at the end.

The White Nile at Malakal fell faster than normally the levels being above normal but much below last year's throughout the month.

The Blue Nile at Roseires fell at practically normal rate the levels being above normal and almost identical with those of last year throughout. At Khartoum the Blue Nile fell at normal rate, the levels being on the average 22 centimetres above normal.

The Main Nile at Kangarti fell at almost normal rate the levels being about 34 centimetres above normal throughout the month.

Kangarti gauge is 47 kilometres upstream of Wadi Halfa gauge and is used instead of Halfa gauge during that period of the year when the latter is affected by the heightened Aswân Reservoir.

The amount of water reaching Aswan during the month was about 17 per cent

The differences of the mean levels in January 1934 from those of January 1933 and from the normal 1906-1930 were:-

o,n	A WILLIAM		Mean Differen	NCES OF LEVELS				
91	ATION.		Jan. 1934 minus Jan. 1933   Jan. 1934 minus Nor					
		 	Metres	Metres				
Juba Nasser Malakal Roseires Khartoum Kangarti	•••	 •••	- 0.22 - 2.07 - 1.03 + 0.03 - 0.13 + 0.05	+ 0.16 - 0.09 * + 0.42 + 0.26 + 0.22 + 0.34 †				

<sup>\*</sup> Nasser normal is for 1922-1930 only.

<sup>†</sup> Kangarti normal is deduced from compariso curve be



### Discharges of the Nile during December, 1933

Observed by the Irrigation Department.

					y the 111	igation De	paremen.		«te	and the state of t	
Day of Month	Gauge Reading m.	Disch. m³. p.s.	Day of Month	Gauge Reading m.	Disch. m³, p.s.	Day of Month	Gauge Reading m.	Disch. m <sup>3</sup> , p.s.	Day of Month	Gange Reading m.	Disch, m³, p.s.
Fana	(D.S. Ba	rrage)	H	alfa (conta	<i>l</i> .)	Gezi	ra Main	 Canal	River		Head)
	Main Nile		27	3.05	1850		(Kilo. 1•3			isser Gau;	
5	73.78	1810	28	3.04	1870			·	3	10.26	547
12	73.75	1710	31	3.02   onthly Mean	$\begin{array}{c} 1860 \\ 2110 \end{array}$	2 2	15.80 15.80	$\begin{bmatrix} 62 \\ 60 \end{bmatrix}$	4	10.22	533
19 <b>2</b> 6	73·74 73·23	$\begin{array}{c} 1650 \\ 1330 \end{array}$		an 1912-1932		17	15.88	66	5 7	10.18	515 506
	onthly Mean	•		<b>A</b> 41 /	77:1 0)	17	15.88 lonthly Mear	66 1 62	9	9.98	476
prox. m	offithing mean	1000	F 1	Atbara (	K110. 3)   76	1 1	an 1925-1937	!	12 13	$\begin{vmatrix} 9.78 \\ 9.72 \end{vmatrix}$	$\begin{array}{c} 456 \\ 435 \end{array}$
	Aswân		$\begin{bmatrix} 3 \\ 8 \end{bmatrix}$	10.58	66				14	9.64	429
(Measi	ured by S	luices)	13	10.22	48	Rose	ir <b>es</b> (Blue	Nile)	$\begin{vmatrix} 16 \\ 18 \end{vmatrix}$	9·51 9·33	$rac{420}{412}$
	ân D.S. G		$\begin{vmatrix} & 17 \\ 22 \end{vmatrix}$	10.12	37 25	1	13.92	825	19	9.24	398
1	86.95	1740	28	9.90	21	3	13.78	751	$\frac{20}{21}$	$\begin{array}{c c} 9.15 \\ 9.05 \end{array}$	39 <b>2</b> 375
$\frac{2}{2}$	86.95 86.94	$1740 \\ 1740$		onthly Mean an 1912-1932	15 15	5 7	13.67	705 6 <b>71</b>	23	8.84	378
$\frac{3}{4}$	86.94	$\begin{array}{c} 1740 \\ 1740 \end{array}$	Normanica	an 1912-1932	1.,,		13.46	647	$\begin{array}{c c} 26\\ 27 \end{array}$	8:45 8:31	$\frac{341}{329}$
5	86.94	1740	Hassa	nab (Mair	ı Nile)	11	13:38	609	$\frac{27}{28}$	8.19	323
6 7	86.92 86.94	$\begin{array}{c} 1740 \\ 1740 \end{array}$	2	12.23	2020	13 15	13·30 13·21	586 558	30	7.93	296
8	86.93	1740	7	12.21	$\frac{1990}{1870}$	1.7	13.12	537	Approx. M	onthly Mean	425
$\frac{9}{10}$	86·92 86·92	$\begin{array}{c} 1740 \\ 140 \end{array}$	$\begin{array}{ c c c c }\hline & 12 \\ 16 \\ \end{array}$	12.08 12.02	1780	19 21	13.09 13.02	$\begin{array}{c} 510 \\ 495 \end{array}$	Normal Me	an 1929-1932	397
11	86.92	$1740 \\ 1740$	21	11.93	1750	23	12.96	476			
12	86.92	1740	27	11.82	1630	25	12.89	444			
13 14	86:90 86:89	$\begin{array}{c} 1740 \\ 1740 \end{array}$		onthly Mean an 1912-1932		27 29	12·84 12·78	$\begin{array}{c c} 433 \\ 416 \end{array}$		liver Bar	
15	86.90	1750				31	12.75	396	(6 Km	s. U.S. Baro-	Piber
$\begin{array}{c} 16 \\ 17 \end{array}$	86:90 86:89	$\begin{array}{c} 1750 \\ 1740 \end{array}$	Tamar	niât (Mair	ı Nile)	Approx. M	onthly Mear	1	4121	Junction)	`
18	86.89	1740	4	11.90	2040	Normal Me	ean 1912-19	32 492	(Pibo	r Mouth G	
19	86.80	$1670 \\ 1600$	$\begin{bmatrix} & 9 & 13 \end{bmatrix}$	11.80 11.76	$\frac{1980}{1910}$	}			3	8.88	$\begin{array}{c} 272 \\ 271 \end{array}$
$\frac{20}{21}$	86.60	1530	18	11.66	1780	Mogre	en (White	Nile)	$\frac{4}{5}$	8.75	$\frac{271}{256}$
22	86.2	1460	$\begin{vmatrix} 23 \\ 30 \end{vmatrix}$	11.46	$\frac{1790}{1610}$	3	12:30	1300	7	8:62	237
$\begin{array}{c} 23 \\ 24 \end{array}$	86.43	1390 1390		onthly Mean		$\frac{7}{12}$	$12.23 \\ 12.16$	$egin{array}{c} 1270 \ 1290 \ \end{array}$	$\frac{9}{12}$	8:49	$\frac{204}{195}$
25	86:38	1390	Normal Me	ean 1912-193		17	12.04	1230	13	8.23	196
$\begin{array}{c} 26 \\ 27 \end{array}$	86·39 86·37	$1400 \\ 1390$				21	11.98	1270	14 $16$	8.16	$\frac{187}{177}$
28	86.36	1390	1 1	oum (Blue		28	11.79		18	7:89	169
<b>29</b> 30	86.27	$\begin{array}{ c c } & \textbf{1330} \\ & \textbf{1280} \end{array}$	$\begin{bmatrix} 2 \\ 6 \end{bmatrix}$	12.04 12.03	$\begin{array}{c} 794 \\ 762 \end{array}$	1	onthly Mear can 1912-19	,	19 20	7:83 7:75	$\begin{array}{c} 168 \\ 163 \end{array}$
31	86.17	1280	11	11.88	632	Normal M	CBH 1912-19	32 T(10)(1	$\frac{20}{21}$	7.69	160
pprox. M	lonthly Mear	1 1610	16	11.80	557	Malak	âl (White	Nile)	23	7:53	148
ormal Me	an 1912-1932		$\frac{20}{27}$	11.71	$\begin{array}{c} 445 \\ 420 \end{array}$		,	1360	26 27	7:27 7:19	$\frac{139}{135}$
			Approx. M	onthly Mean		10	$\begin{vmatrix} 12.70 \\ 12.67 \end{vmatrix}$	$\begin{array}{c c} 1300 \\ 1420 \end{array}$	28	7.10	131
Hal	fa (Main	Nile)	Normal Me	an 1912-1932	2 548	15	12.64	1260	30	6.56	124
3	3.62	2380	Sann	ar (Blue I	NG(a)	20 25	12.58 12.50	1290 1170	Approx M	onthly Mean	188
4	3.28	2350		(6:05)	736	30	12.39		Normal Me	an 1929-193	2 172
<b>5</b> 6	3.55	$\begin{vmatrix} 2350 \\ 2280 \end{vmatrix}$	$\begin{vmatrix} 2 \\ 4 \end{vmatrix}$	5.92	660	Approx. M	onthly Mean	n 1280			
7	3.47	2250	6	5.82	625	Normal Me	ean 1912-19	<b>32</b> 1100	Camb	eila (River	Rarol
$\begin{array}{c} 9 \\ 12 \end{array}$	3·42 3·35	$\begin{vmatrix} 2230 \\ 2160 \end{vmatrix}$	9	5•73 5•70	$\begin{array}{c} 584 \\ 586 \end{array}$				1	•	
13	3.34	2170	13	5.62	548	Hillet D	oleib (Riv	ver Sobât)	Nov. 7	11:35 11:30	406 389
14 15	3.32	2120	19	5·44 5·44	$\frac{445}{445}^*$	3	14.17	780	15	11.10	336
16	3.34	2160 2150	21	5.44	441*	$\begin{bmatrix} & 9 \\ 14 \end{bmatrix}$	14·12 14·07	$\begin{array}{c c} 762 \\ 739 \end{array}$	17	11.06	3 <b>27</b> 212
17	3.31	2120	$\begin{vmatrix} 23 \\ 25 \end{vmatrix}$	5·39 5·23	428* 350*	$\begin{bmatrix} 14 \\ 20 \end{bmatrix}$	13.99	707	$\begin{array}{c c} 21 \\ 25 \end{array}$	10.98 10.96	31 <b>3</b> 315
18 19	$\frac{3 \cdot 29}{3 \cdot 27}$	2170 2090	$\begin{array}{ c c c c }\hline & 25 \\ 27 \\ \end{array}$	5.12	330*	24	13.89	652	28	10.90	282
20	3.24	2040	30	5.09	320*	31	13.62		Approx. M	ionthly Mean	346
$\begin{array}{c} 21 \\ 22 \end{array}$	3.20	2070 2050		onthly Mear ean 1912-193		1 1	onthly Mear an 1912-1932		Normal Me	an 1928-1932	25 <b>1</b>
		, 4000		4718 170	v						
			-								

<sup>\*</sup> Site transferred to Hillet Sherif.

## Discharges of the Nile during December, 1933 (continued)

Observed by the Irrigation Department

Day Gauge Reading Month m.	Disch m³. p.s.	Day of Month	Gauge Reading m.	Disch. m³. p.s.	Day of Month	Gauge Reading m.	Disch. m³, p.s.	Day of Month	Gauge Reading m.	Disch. m³. p.s.
Gambeila (con 5   10.64   10.48	td.) 232 189	(U.S. )	<b>iver Pib</b> o Tokwai Jun kwai Gai	ction)	Dec. 5	cobo (con	( 35		l <b>Jebel (</b> ke No Gau	
$\begin{array}{c cccc} 8 & 10.36 \\ 12 & 10.26 \\ 15 & 10.18 \end{array}$	172 170 164	10 17 24 31	9:27 8:88 8:40 7.80	152 163 163 141	$ \begin{array}{c c} 10 \\ 15 \\ 20 \\ 25 \\ 30 \end{array} $	14.52 14.44 14.24 13.99 13.64	24 31 28 25 25	18 29 Approx. Me	14.06 14.04 14.04 onthly Mean	307 301 300
River Pibor (6 Kms. U.S. Baro-Pibor (Pibor Mouth Ga	Junction)	}	onthly Mear an1929-1932			onthly Mear an 1929-1932			g (Bahr el	
3   8.88   4   8.82   5   8.75   7   8.62	243 245 246 245	(D,8.	<b>iver Pib</b> Gila Juneti	ion)	<b>[</b> ]	l Zerâf ( uge at Mou	•	(Wes	tern Chan 29•14	nel) 215
9 8.48 12 8.30 13 8.22 14 8.16	249 257 247 251	$\begin{array}{c c} & & & \\ & 11 \\ & 25 \end{array}$	ila Gauge 9•78 9•17	122 118	8 19 27 30	13.18 13.10 13.01 12.97	209 225 224 221	1	onthly Mean in 1931-1932	
16 8.04 18 7.88 19 7.82 20 7.74	245 235 238 226	1 7	onthly Mean an 1929-1932			onthly Mean an1912-1932		1 1	<b>a</b> (Bahr el tern Chan 23°88	• .
21	227 224 200 193 193	1	<b>Gila</b> (at Iila Gauge   9•78	,	( <b>T</b> o	ong (Whi	ge)	1	nthly Mean in 1931-1932	669
Approx. Monthly Mean Normal Mean 1929-1932	177 230 196	25 Approx Mo	9·17 onthly Mear on 1929-1932	53 ı 56	8 19 30 Approx. Mo	13.31   13.23   13.10	312 328 335 326	Terrakel	k <b>ka (</b> Bahr 13:42	el Jebel) 919
River Pibor (D.S. Mokwai Jur		]	ver Pibe		Normal Mea	an 192 <b>3-1</b> 932	291	1	nthly Mean n 1931-1932	872 937
(Mokwai Gaug 10 9.27 17 8.88 24 8.40 31 7.80 Approx. Monthly Mean	′ 1	11 25 Approx. Me	. Gila June Gila Gauge 9.78 9.17  onthly Mean in 1929-1932	73 68 71	7 18 29 Approx. Mo	No (Whit   14:08     14:06     14:04     ponthly Mean   an 1923-1932	304 309 288 302	Mongall  1 6 11 16 26	11:92 11:89 11:88 11:91	892 886 876 896
NormalMean 1929-1932  Khor Mokwai (at (Mokwai Gaug  10   9.27   17   8.88	71 55	Nov. 5 10 15 20	14.74 14.76 14.76 14.76	52 54 51 44	(Suddite	or el Gha At Mouth Factory (	) Gange) 21	Approx. Mo	11.84   onthly Mean in 1912-1932	859 878 829
24 8.40 31 7.80 Approx. Monthly Mean Normal Mean 1929-1932	35 22 55 70	İ	14.70 14.66 Inthly Mean In 1929-1932	Į.	1	14.11 14.1() onthly Mean an,1923-1932	1			;

Correction :-Gambeila discharge on Nov. 3rd. should read 445 and not 464 as published last month.

### Occasional Discharges

### Observed by the Irrigation Department

DATE	RIVER	Site	GAUGE	Disch.
	101 1 20 [5	NAAB	Reading Site	m³. p.s,
			М.	
 <b>)</b>		River Sobât Tributaries		
-12–1933	Khor Fullus	U.S. Tail	14·18 H.Doleib	19
-12-1933	,, ,,		14.08 ,,	17
-12-1933	,, ,,	Tail	13.91 ,,	16
		White Nile Tributaries		
-12-1933	Khor Lolle	30 Kms. U.S. Tonga Cut	13·32 Tonga	19
-12-1933	,,		13.24 ,,	18
12-1933	,,	U.S. Tail		34
-12-1933 -12-1933	, -		$\begin{vmatrix} 13 \cdot 32 & & & \\ 13 \cdot 24 & & & \\ & & & & \end{vmatrix}$	51
-12-1933	,,	Tail"	19.19	35 41
-12-1933		U.S. Tonga Cut	$\begin{vmatrix} 13 & 12 \\ 13 & 32 \end{vmatrix}$ ",	57
-12-1933	,,	,, ,, ,,	13.24 ,,	60
12-1933	,,	25	13.12	38
-12-1933 -12-1933	, -	U.S. Tail	14.08 Lake No	
-12-1933 -12-1933	,,	Tail	$egin{array}{ c c c c c c c c c c c c c c c c c c c$	9
-12-1933		U.S. Tail	14·39 K.Yergol	$\frac{10}{22}$
-12-1933	,,	32	14.35 ,,	$\tilde{14}$
-12-1933	,,		14.30 ,,	14
-12-1933	Khor Atar	U.S. Tail	13.43 Fenikang	21
	•	Bahr el Zerâf and Tributaries		
-12-1933	Jebel Zerâf Cuts	Head Cut No. 1	12.08 H. Cut 1	90
-12-1933	zerâf ,, ,,	Tail Cut No. 1	$28 \cdot 40 \ T. ,, 1$	89
-12-1933 -12-1933	Zerâf Jebel Zerâf Cuts	U.S. Tail Cut No. 1	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	38
-12-1933		Head Cut No. 2	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	16
-12-1933	Zerâf " "		$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	15 154
-12-1933		Head	23 · 98 K. Gurr	—5
-12-1933	Zerâf	D.S. Khor Gang	23.98 ,,	135
-12-1933	Khor Gurr	Tail	23.98 ,,	109
-12-1933	Zerâf	200 mts. D.S. Khor Gurr Junction	$23 \cdot 98$ ,,	189
-12–1933 -12–1933	Khor Gang	Khor Gurr Gauge	23.98	179
12-1933	Zerâf	Tail	23.98 ,,	31
12-1933	,,	Mashra Kwatah Cango	23.98 ,, 21.46 M. Kwatch	180 179
-12-1933	,,	D.S. Khor Tithbel	21.46	177
-12-1933		R. P. 29	18.88   Pole 29	177
12-1933	Khor Famir	3 Kilos U.S. Tail	18.88	1
-12-1933 -12-1933	Zerâf	R.P. 24	18.88 ,,	157
12-1933	Khor Nwazlyel	Pole 19	17 · 14   Pole 19	153
12-1933	Zerâf	Formal	17·14 ,,	18
12-1933	,,	Pole 10	12·77   Fangak   15·50   Pole 10	$\begin{array}{c} 205 \\ 220 \end{array}$
12-1933	,,	,, 6	15.50   1016 10	$\begin{array}{c} 220 \\ 223 \end{array}$
		Bahr el Jebel		
12-1933	Jebel	About 5 Kms. U.S. Gigging	29·14 Gigging	195
12-1933	,,	,, 3 ,, D.S. ,,	29.14 ,,	215
12–1933	,,	,, 7 ., ,,	29·14 ,,	210
e 1	1	i i	i i	

P. Phillips,

Director, Hydrological Service.

Government Press

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## Ministry of Public Works, Egypt - Physical Department

# REPORT ON THE WEATHER AND STATE OF THE RIVER FOR FEBRUARY 1934

#### The Weather

After the first week, exceptionally cold.

At the beginning of the month Egypt was an area of high pressure, and the weather was mild. The approach of a small depression gave rise to warm southerly winds. On the 5th the temperature in Cairo reached 25° C, or 5° C, above normal, and this was by far the warmest day of the month.

On the 6th the depression was north of the Delta, and strong cold west and northwest winds arriving in Egypt caused a rapid fall in temperature; in Cairo it was about 7° C. cooler at noon than at the previous midnight. At Alexandria the wind velocity reached 85 kilometres an hour.

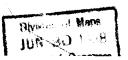
From the 8th until the end of the month Egypt was almost continuously under the effect of low pressure over the eastern Mediterranean, and a prolonged spell of abnormally cold weather was experienced.

On the 10th the depression over Cyprus deepened, and the weather became very unsettled and rainy for three days. At Alexandria the wind velocity at one time reached 90 kilometres an hour, and maintained gale force for 15 hours; conditions over the eastern Mediterranean were very rough. A current of cold air from the Black Sea reaching Egypt on the 10th eventually traversed the Sudan to the extreme south.

The weather improved on the 12th but two days later a depression moved from Asia Minor to Cyprus and deepened. Very severe cold was prevailing at this time in the Balkans, and on the 15th northerly winds arriving from this region struck western Egypt, resulting in remarkably cold weather conditions along the coast. At Salum the temperature fell to freezing point (an extremely rare phenomenon for coastal localities in Egypt), and sleet and snow fell more or less continuously during the morning. The ground was covered, in some places about an inch deep, and the western and nortwestern walls of buildings were covered with snow, which remained for some hours. During this blizzard the wind velocity rose to 90 kilometres an hour. Freezing point was reached also on the following night. As Mersa Matruh the temperature did not exceed 4° C. throughout the day, and fell to 2° (... during the night. At Alexandria the minimum temperature was 2.80 C.,—the lowest on record there since 1888 at least. Heavy rain and hail fell along the coast, the largest amoun recorded being 28 millimetres at Matruh and in many localities severe sandstorms occurred seriously affecting transport. The cold wave crossed Egypt rapidly, and in the early morn ing of the 17th the temperature fell to freezing point at many places in the Delta and the Fayum, and even at Qena in Upper Egypt, while in the oases of Baharia, Dakhla and Kharga, temperatures of 3°, 2° and 4° C. below freezing point were registered. In the Sudan the temperature fell to 9° or 10° C, below the normal.

Subsequently the cold became less pronounced, but on the 23rd, following the passage of a depression along the Mediterranean to Iraq, winds from Asia Minor again brought a sharp fall in temperature in Egypt, and the cold weather continued with gradually diminishing intensity until the end of the month.

For the month as a whole the barometric pressure was above normal except in the central and southern Sudan, while the temperature was everywhere below normal. This was the coldest February since 1911 on the Mediterranean coast; elsewhere in Egypt it was the coldest February since 1920. Rain fell at Alexandria on 13 days—eight of them in succession, and on the Mediterranean coast the rainfall was about double the normal for the month; inland it was about normal.



TARLE	SHOWING	THE	DEPARTURES	FROM	NORMAT.	FOR	FERRITARY	1934
TADLE	SHOWING	111111	DEFENIONS	FRUM	LIONMAN	TO IL	TIDITOTILI	TOUT

		BAROMETRIC					RAINFALL				
TO LOOKE TO LOOKE		Press	URE.	MAXI	MUM.	Mini	MUM.	Max.+	M IN./2.	KAIN	FALL
DISTRICTS		1934.	Difference. from Normal	1934.	Difference from Normal.	1934.	hifference from Normal.	1934.	Difference from Normal	1934.	Difference from Normal
	***************************************	mb.	mb.	°C.	°C.	°C.	°C.	°(:, ,	°C.	nım.	mm.
I. Mediterranean II. Middle Egypt III. Upper Egypt IV. North Sudan V. Red Sea * VI. Central Sudan VII. South Sudan		1019·0 1013·9 1015·7 1011·7	+1·5 +1·2 +0·7 +0·5 +0·9 -0·8 -0·1	17·2 18·6 22·5 30·9 25·9 34·3 35·7	-1·7 -1·9 -2·3 -1·7 -1·2 -0·7 -1·1	8:1 6:0 6:3 13:8 18:6 14:6 18:6	-2·2 -1·5 -2·4 -1·0 -0·4 -0·5 -0·4	12·6 12·3 14·4 22·4 22·2 21·4 27·2	$\begin{array}{r} -2.0 \\ -1.7 \\ -2.4 \\ -1.4 \\ -0.8 \\ -0.6 \\ -0.8 \end{array}$	47 9 0 0 6 0	$\begin{vmatrix} +21 \\ -1 \\ -1 \\ 0 \\ +2 \\ 0 \\ -6 \end{vmatrix}$

<sup>\*</sup>Port Sudan Only.

Note.-1,000 millibars is equivalent to 750.1 millimetres at O°C, and mean gravity.

L. J. Sutton,

Director, Meteorological Service.

#### State of the River.

Lake Albert at Butiaba fell 19 centimetres during the month. Its level on March 1st, 1934 was 43 centimetres above the normal but 56 centimetres below that of the corresponding day of last year.

The Bahr el Jebel at Juba remained steady during the month, the levels being above normal but below last year's throughout.

The River Sobat at Nasser fell at normal rate until the 21st, rose slightly for two days and fell again thereafter. The levels were below both the normal and those of last year.

The White Nile at Malakal fell at normal rate until the 25th and remained steady thereafter. The levels were a few centimetres above normal but much below last year's.

The Blue Nile at Roseires fell rather faster than normally during the month.

At Khartoum the Blue Nile fell generally faster than normally for the first 23 days and then rose slightly to the end of the month.

The Main Nile at Kajnarti fell faster than normally throughout the month, the level which was 23 centimetres above normal at the beginning being 1 centimetre below it at the end.

The differences of the mean levels in February 1934 from those of February 1933 and from the normal 1906–1930 were:—

o.m.	. //ht/\\$7			- 1	Mean Differen	CES OF LEVELS			
817	ATION.	•			Feb. 1934 minus Feb. 1933 Feb. 1934 minus No				
					Metres	Metres			
Juba		•••			- 0.24	+ 0.16			
Nasser Malakal	•••	•••	•••		-0.25 $-0.53$	-0.17 * + 0.11			
Roseires Khartoum	•••	•••	•••	:::	$\frac{-0.05}{-0.51}$	+ 0·17 + 0·07			
Kajnarti	•••	•••	•••		- 0·60	+ 0.18			

<sup>\*</sup> Nasser normal is for 1922-1930 only.

By Transfer U, S, Weather Bureau JUN 2 0 1938

## Discharges of the Nile during January, 1934

Observed by the Irrigation Department.

Month   Mont												
Chain Nile   1270   25   133-97   1400   26   133-98   1410   27   133-88   1410   28   133-88   1410   29   133-88   1410   28   133-88   1410   28   133-88   1410   29   143-88   1410   29   143-88   1410   29   143-88   1410   29   143-88   1410   29   143-88   1410   29   143-88   1410   29   143-88   1410   29   143-88   1410   29   143-88   1410   29   143-88   1410   29   143-88   1410   29   143-88   1410   29   143-88   1410   29   143-88   1410   29   143-88   1410   29   1410   213-88   1410   29   1410   213-88   1410   29   1410   213-88   1410   29   1410   213-88   1410   29   1410   213-88   1410   29   1410   213-88   1410   29   1410   213-88   1410   29   1410   213-88   1410   29   1410   213-88   1410   29   1410   213-88   1410   29   1410   213-88   1410   29   1410   213-88   1410   29   1410   213-88   1410   29   1410   213-88   1410   29   1410   213-88   1410   29   1410   213-88	of	Reading	1	οť	Reading		of	Reading		l of	Reading	Disch, m³, p.s.
Aswan   Aswa	2 9 16 24 31	Main Nile  73.01  73.01  73.00  73.07  73.01	$\begin{array}{c c} 1290 \\ 1210 \\ 1270 \\ 1320 \\ 1270 \end{array}$	25 26 27 28 30 31 Approx. Mo	133.97   133.91   133.88   133.85   133.75   133.72   ponthly Mean	$\begin{array}{c} 1460 \\ 1420 \\ 1410 \\ 1420 \\ 1360 \\ 1370 \\ 1560 \\ \end{array}$	1 1 20 20	(Kilo. 1·3   15·82   15·82   15·64   15·64	59 60 51 51	(Na 1 2 3 4 6	Sobât (at reser Ganger 17:72 reser 17:19 reser 17:25	ge) 282 293 271 268 251
Aswan   Casarred by Shiness   Aswan D.S. Gauge.   4   9°81   19   19   15   6.30   192   15   6.28   179   179   188   186   16   1280   8   111-75   1630   18   1293   18   6.90   15   15   6.28   179   179   188   189   199	Approx. M	onthly Meai	n 1270	Normal Mea	an 1912-1933	1380	Normal Me	an 1926-1933	4.5	1 4	6.71	234
1   86   16   1280   2   86   16   1270   3   11   75   1630   3   11   75   1630   3   11   75   1630   3   11   21   12   12   12   13   320   22   3   5   5   12   12   12   12   12   13   320   22   3   5   5   12   12   12   12   12   13   320   3   3   3   3   3   3   3   3   3		ared by S		11 .		•	$\begin{vmatrix} 1 & 2 \end{vmatrix}$	12.70	397	13 14 15 16	6:44 6:36 6:28 6:22	200 192 179 170
11	1 2 3 4 5 6 7 8 9	86.16 86.16 86.16 86.16 86.16 86.16 86.18 86.16 86.15	1280 1280 1270 1270 1270 1270 1270 1270 1270 127	3 8 15 23 29 Approx. Me Normal Me	11.75 11.72 11.57 11.46 11.40 on thly Mean an 1912-1933	1630 1610 1450 1240 1250 1430 1240	6 8 10 12 14 16 18 20 22 24	12:58 12:53 12:48 12:43 12:39 12:34 12:31 12:28 12:24 12:24	353 344 333 320 307 291 285 278 266 258	20 21 22 23 24 25 27 28 29 30	5.97 5.90 5.85 5.80 5.70 5.60 5.57 5.53 5.49	146 138 133 127 121 116 105 100 98 92
17	12 13 14 15	86.16 86.16 86.16 86.16	1270 1270 1280 1270	6 10 15 21	11·42 11·37 11·25 11·08	$\begin{array}{c} 1550 \\ 1500 \\ 1420 \\ 1290 \end{array}$	28 30 Approx. M	12.14   12.10   onthly Mean	244 232 302	Approx. M Normal Mea	onthly Mean an 1929-1933	181 178
Khartoum (Blue Nile)   20   11   37   1050   3   6   68   116   25   86   34   1410   25   86   34   1410   26   86   80   1390   13   11   25   282   28   86   20   1340   29   86   22   1340   28   10   98   212   25   11   21   729   30   11   00   719   30   314   31   34   38   1630   10   10   26   276   31   34   33   1620   13   10   30   316   312   34   33   1620   13   134   28   1600   22   9   95   200   12   134   33   1620   13   134   28   1600   22   9   95   200   12   134   33   1620   13   134   28   1600   22   9   95   200   13   134   28   1600   22   9   95   200   13   134   28   1630   29   9   94   183   29   12   12   111   22   67,74   118   38   1630   10   10   26   276   130   134   28   1600   22   9   95   200   11   285   214   1300   29   9   94   183   29   12   12   111   22   67,74   118   38   149   31   9   90   173   300	17 18 19 20	86.15 86.16 86.16 86.14	1270 1280 1280 1270	30 Approx. Mo	10.94 onthly Mean	1190 1390	4	11.76	1260	(Pibo	Junction) r Mouth G	auge)
27 86 25 1360	22 23 24 25 26	86:18 86:30 86:34 86:34	1290 1390 1420 1410	3 8	11:47 11:39	335 330	14 20 25 29	11:56 11:37 11:34 11:20	1140 1060 1100 999	$\begin{array}{c}2\\3\\4\end{array}$	6:74 6:68 6:58	118 116 112
Approx. Monthly Mean 1300 Normal Mean 1912-1933 1110    Hillet Sherif (Blue Nile) (Old Sennar Gauge)   1   10.39   321   3   10.39   316   3   10.39   316   3   10.39   316   3   10.39   316   3   10.07   213   10   134 \cdot 33   1620   11   134 \cdot 23   1640   13   134 \cdot 28   1660   13   134 \cdot 28   1640   13   134 \cdot 28   1660   15   10.03   196   13   134 \cdot 28   1660   15   134 \cdot 29   9.97   194   11   134 \cdot 28   1660   22   9.95   200   14   12 \cdot 85   214   19   134 \cdot 1580   27   9.96   189   24   12 \cdot 35   146   29   19 \cdot 12 \cdot 58   149   23   134 \cdot 02   1480   Approx. Monthly Mean   234   Approx. Monthl	27 28 29 30	86·20 86·22 86·22	1360 1340 1340 1340	19 23 28 Approx. Mo	11:13 11:02 10:98 onthly Mean	244 224 212 271	Normal Me	eau 1912-193	<b>3</b> 9(6)	Dec.19	10.11	127 119
6   134 · 42   1640   8   10 · 36   312   8   10 · 32   298   8   134 · 36   1630   9   134 · 34   1660   13   1620   18   9 · 98   200   13   134 · 32   1640   18   9 · 98   200   13   134 · 28   1600   13   134 · 28   1600   13   134 · 28   1600   13   134 · 28   1630   22   9 · 95   200   14   134 · 26   1590   25   9 · 97   196   134 · 14   1530   27   9 · 96   189   27   9 · 96   189   200   134 · 11   1540   20   134 · 11   1540   20   134 · 11   1540   20   134 · 11   1540   20   134 · 11   1540   20   134 · 11   1540   20   1480   Approx. Monthly Mean   234   Approx. Monthly Mean	Normal Me	an 1912-193	n 1300 3 1110	Hillet S	Sherif (Bl Sennar Ga	ue Nile) uuge) 321	10 16 20 25 30	11:90 11:59 11:43 11:21 11:00	890 812 822 729 719	20 Approx. M Normal Me Jan. 2	9.92 outhly Mean an 1928-1932 9.87 9.80	106 151 144 103 93
12       134·30       1620         13       134·28       1600         14       134·26       1590         15       134·24       1580         19       134·14       1530         20       134·11       1540         23       134·02       1480            20       134·11       1540         Approx. Monthly Mean       234             11       13·02       279         14       12·85       214         19       12·58       202         29       9.94       183         29       12·12       111         29       12·12       111         29       12·12       111         29       12·12       111         29       12·12       111         29       12·12       111         29       12·12       111         3       6.68       157         4       6.58       149	7 8 9 10	134·39 134·36 134·34 134·33	1640 1630 1660 1620	6 8 10 13 15	10.36 10.32 10.26 10.07 10.03	312 298 276 213 196	Normal Mo	ean 1912-193 oleib (Riv	3 814 er Sobâ <b>t</b> )	12 16 19	9.70 9.64 9.64	89 78 79 78
23 .   134 02   1480   Approx. Monthly Mean   234   Approx. Monthly Mean   234   6.58   149	12 13 14 15 19	134·30 134·28 134·26 134·24 134·14	1620 1600 1590 1580 1530	20 22 25 27 29	9.97 9.95 9.97 9.96 9.94	194 $200$ $196$ $189$ $183$	11 14 19 24	13.02 12.85 12.58 12.35	279 - 21 <b>4</b> - 202 - 146	(6 Kms. C.: (Pibo)	8. Baro-Pibor r Mouth G 6.80 6.74	r Junction) auge) 171 164
	<b>2</b> 3 .	134.02	1480	Approx. Mo	onthly Mean	234	Normal Me			4	6.58	149

<sup>\*</sup> Site transferred to Nasser from January, 9th.

## Discharges of the Nile during January, 1934 (continued)

Observed by the Irrigation Department

Day of Reading Month In. Disch, m3, p.s.	Day of Reading Disch, m³, p.s.	Day of Reading Month m. Disch.	Day of Reading Month m. Disch. m3, p.s.
<b>Akobo</b> (River Pibor) 5   13:12   20	Lake No (White Nile)	Bahr el Jebel (Kilo. 3) (Lake No Gauge) 7 + 14:02 + 303	Terrakekka (Bahr el Jebel)  1   13.28   821
10   12.62   17  Bahr el Zerâf (Kilo. 3)	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	7   14·02   363 17   13·99   312 27   13·92   335 Approx. Monthly Mean 316	Approx. Monthly Mean 794 Normal Mean 1931-1933 832
(Gauge at Mouth)  9   12 · 68   227  18   12 · 42   238  28   12 · 16   220	Approx. Monthly Mean 347 NormalMean 1923-1933 3(0)	NormalMean 1923-1933 289  Gigging (Bahr el Jebel)	Mongalla (Bahr el Jebel)
Approx. Monthly Mean 228  Normal Mean1912-1933 149	Bahr el Ghazal	(Western Channel)  3   29.00   203  Approx. Monthly Mean 190	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
Abu Tong (White Nile) (Tonga Gauge)	(At Month) (Suddite Factory Gauge)	NormalMean 1931-1933 199	21   11.73   799 26   11.70   775 Approx. Monthly Mean 813
$\begin{array}{c cccc} 9 & 12.89 & 362 \\ 18 & 12.65 & 393 \\ 28 & 12.45 & 400 \end{array}$	$ \begin{array}{c cccc} 7 & 14.10 & 11 \\ 16 & 14.06 & 23 \\ 27 & 14.02 & 32 \end{array} $	Gemeiza (Bahr el Jebel) (Eastern Channel) 2   28.76   636	Normal Mean 1912-1933 749
Approx. Monthly Mean 378 Normal Mean 1923-1933 317	Approx. Monthly Mean 22 Normal Mean 1923-1933 16	Approx. Monthly Mean 618 Normal Mean 1931-1933 619	

### Occasional Discharges

## Observed by the Irrigation Department

		0	GAUGE	Discн.
DATE	River	Site	Reading Site	m³. p.s.
			M.	
(		River Sobât Tributaries		
10-1-1934	Khor Fullus	Tail	13.06 H.Doleib	14
14-1-1934	Tellor Telline	,,	. 12.85 ,,	11
23-1-1934	,, ,,	,,	. 12.38 ,,	11
		White Nile and Tributaries		
٠				
6-1-1934	Tonga Cut		10.70	51
15-1-1934	,,	,, · · · · · · · · · · · · · · ·	19.51	$\begin{array}{c} 32 \\ 20 \end{array}$
25-1-1934 25-1-1934	,,	Head	10 71	18
6-1-1934	Khor Lolle	U.S. Tonga Cut	19.00	38
15-1-1934	,,	,, ,, ,,		39
25-1-1934	,,	,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,		30
8-1-1934	White Nile		1 34 00 T 1 NT	
8-1-1934 16-1-1934	Maya Sinyora	İ	19.00	6
26-1-1934	,,	,,	10.00	3
8-1-1934	White Nile	the property of the contract o	. 14.02 ,,	307
		Bahr el Jebel		
3-1-1934	Jebel (west. chann.)	0 10 0		182
3-1-1934	,, ,, ,,	<b>7</b>	99.00	201 192
3-1-1934	2, 3, ,	,, 7 ,, ,,	. 25'00 ,,	102
	1			

P. Phillips,
Director, Hydrological Service.

#### Ministry of Public Works, Egypt—Physical Department

# REPORT ON THE WEATHER AND STATE OF THE RIVER FOR MARCH 1934

#### The Weather

Four heat waves of moderate intensity were experienced during March.

At the beginning of the month a depression was approaching from the west, and on the 3rd was situated over the desert west of Siwa Oasis, causing very warm southerly winds and khamsin weather to prevail in Egypt. At Salum the wind velocity reached 100 kilometres per hour. By the following morning the depression was off Alexandria, while a deeper depression was centred over Crete. Throughout Egypt the winds strengthened, reaching gale force in many localities, while sandstorms were general and of unusual severity, considerably impeding railway traffic in places by depositing sand on the permanent way, while navigation in the canal and ports was adversely affected by the gale and the low visibility due to the sand in the air. The southerly gale at Salum, which began in the afternoon of the 3rd, increased greatly in severity in the morning of the 4th, causing extensive structural damage. At the height of the storm the velocity reached 122 kilometres per hour and on account of the lifted sand visibility was at times less than thirty metres. This is the highest wind velocity on record in Egypt, the previous highest being 119 kilometres per hour at Alexandria in January 1908. With the passage of the depressions towards Syria on the following day, winds in Egypt veered to the west and moderated, while the temperature fell appreciably.

For the next week the weather was slightly cooler than usual for the time of year, with moderate winds chiefly from the west for the first few days, while later high pressure over western Egypt resulted in fresh north-easterly winds.

On the 15th a depression was centred off Benghasi, and moving rapidly along the coast, caused warm southerly winds in Egypt, but by the evening of the following day this depression had passed the Delta, and cool northerly winds following in its rear brought an abrupt fall in temperature. Settled conditions with pleasant weather prevailed until the 23rd, when a depression developed over Upper Egypt. There was little wind, and the weather became warmer. A thunderstorm occurred near Qena; heavy rain fell which caused floods and much damage to houses and crops in that district. The rainfall area extended from the Nile to the Red Sea coast.

On the 26th a deep depression was centred off Benghazi, while there was a shallow depression in the desert west of Aswan, the warm weather being maintained. With the passage of the Mediterranean depression to the east, a well developed north-west current traversed Egypt by the following evening, bringing a sharp fall in temperature. At the end of the month the weather again became warm under the influence of easterly winds.

For the month as a whole, barometric pressure was normal along the Mediterranean coast and below normal elsewhere, especially in Upper Egypt and the northern and central Sudan. Temperature was above normal, but not by large amounts. Apart from the storm in Upper Egypt on the 23rd, practically no rain fell in Egypt. In the southern Sudan rainfall was normal. The strong winds on the Mediterranean coast especially in the west, reaching hurricane strength at Salum, were an outstanding feature.

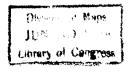


TABLE SHOWING THE DEPARTURES FROM NORMAL FOR MARCH 1934

		BAROM	ETRIC		TEMPÉRATURE.						RAINFALL	
		PRESSURE.		Max	MUM.	. MINIMUM.		MAX.+MIN./2.		Wathratai		
DISTRICTS		1934.	Differense. from Normal	1934.	bifference from Normal.	1934.	hifference from Normal.	1934.	Difference from Normal.	1934.	Difference from Normal	
		nıb.	mb.	°C.	°C.	°C.	°(!,	°C.	°().	mm,	mm.	
I. Mediterranean II. Middle Egypt III. Upper Egypt IV. North Sudan V. Red Sea * VI. Central Sudan VII. South Sudan		1013.6 1008.8 1012.5	0·0 -1·2 -1·9 -2·1 -0·5 -2·2 -1·0	21:9 25:8 31:2 38:0 28:7 39:1 38:7	+1·3 +1·8 +1·6 +1·8 +0·1 +1·4 +0·3	12·5 10·6 12·2 18·8 19·4 18·3 20·7	+0.5 +0.8 +0.1 +1.0 -0.2 +0.4 -0.5	17·2 18·2 21·7 28·4 24·0 28·7 29·7	+0 9 +1 3 +0 8 +1 4 -0 0 +0 9 -0 1	$0 \\ 0 \\ 0 \\ 3 \\ 0 \\ 0 \\ 24$	-11 -5 0 + 3 - 1 - 1 + 2	

<sup>\*</sup>Port Sudan Only.

L. J. Sutton,

Director, Meteorological Service.

#### State of the River.

Lake Albert at Butiaba fell 14 cms. during the month. Its level on April 1st, 1934 was 39 cms. above the normal but 58 cms. below that of the corresponding day of last year.

Except for a flush on the fifth the Bahr el Jebel at Juba remained almost steady throughout the month. The levels were a few cms. above normal but much below those of last year.

The River Sobat at Nasser fell steadily during the month the levels were below both the normal and last year's.

The White Nile at Malakal fell at normal rate. The levels were a few cms. above normal but below last year's throughout the month.

The Blue Nile at Roseires fell faster than normally. The levels were above normal for the first three weeks and below it thereafter but below last year's throughout the month.

At Khartoum the Blue Nile fell at normal rate. The levels were a few cms. below normal and much below last year's.

The Main Nile at Kajnarti fell faster than normally during the first ten days and at normal rate thereafter, the levels were below normal and much below those of last year.

The differences of the mean levels in March 1934 from those of March 1933 and from the normal for 1906-30 were:—

					MEAN DIFFERENCE	MEAN DIFFERENCES OF LEVELS					
STATION.					March 1934 minus March 1933	March 1934 minus Norm					
		· · · · · ·			Metres	Metres					
Juba		•••		• • •	- 0.32	+ 0.11					
Nasser	• • •	• • •	• • •		- 0:34	-0.31 †					
Malakal					- 0.20	+ 0.11					
Roseires			• • •	• • •	0·1 <u>2</u>	+ 0.02					
Khartoum			•••		— ()·17	-0.08					
Kajnarti				• • •	— 0·73	— 0·15					

<sup>†</sup> Nasser normal is for 1922-1930 only.

# Discharges of the Nile during February, 1934

Observed by the Irrigation Department.

											****
Day	Gauge	Disch.	Day of	Gauge	Disch	Lay	Gauge Reading	Disch.	Day • of	Gauge Reading	Disch. m <sup>3</sup> , p.s.
of Ionth	Reading m.	m³, p.s.	Month	Reading m.	m <sup>3</sup> , p.s.	Month	m.	m <sup>3</sup> , p.s.	Month	10.	т. р.в.
					-						
	ļ	•					• ,	.7)	Comb	•:1• /D:	D
	(D.S. Ba		Hassa	ınab (Mai		i	seires (cor	$\frac{da.)}{191}$	Jan.23	<b>eila</b> (Rive + 9:58	r Daro) ! 70
(	Main Nile		$\begin{vmatrix} 1 & 1 \\ 6 & \end{vmatrix}$	11:34 11:28	1200 1130	11 13	11:89	186	27	9.54	63
6	73.02 72.65	1260 1080	15	11.02	915	1.5	11.81	178	30	9:53	61
$\frac{13}{20}$	72.53	969	20	10.95	879	17	11:79	$\begin{bmatrix} 175 \\ 170 \end{bmatrix}$	Approx. A	Aonthly Mea	n 79
27	72.32	908	27	10.80	76.1	21	11.80	178	Normal M	ean 1928-19 <b>3</b>	<b>3</b> 81
prox. M	ionthly Mea	n 1080	11	Aonthly Mea ean 1912-193	i	23	11.79	173	12.1.1	1 0.40	J 50
			Normal M	ean 1912-195	· · · · · ·	25 27	$-\frac{11.75}{11.70}$	$\begin{array}{c c} 166 \\ 158 \end{array}$	Feb. 2 5	9·48 9·44	58 58
	Aswân		Tama	niât (Mai	in Nile)		lonthly Mean	1	9	9.40	57
(Meas	ured by S	Sluices)	4	10.87	1190	Normal M	lean 1912-19	<b>33</b> 186	12	9.38	55
	ân D.S. G		8	10.76	1040	Mogr	en (White	Nile)	Ako	bo (River	Pihor)
1 2	86.21	$\begin{array}{c c} 1340 \\ \hline 1360 \end{array}$	13 18	10.55	886 777	] :3	1 11.16	970	Jan.15	12.09	14
$\tilde{3}$	86.23	1360	$\frac{10}{22}$	10.32	732	7	11.02	916	20	12 03	
4	86.21	+1340 = 1320	26	10.58	+ 698	12	10.78	767 682	25	10.80	7
5 6	$\frac{1}{86.16}$	1290		Aonthly Mea		21	10.57	625	30	10.42	4
7	86.10	1270	Normal N	Mean 1912-1	933 895	25	10.53		l I	Monthly Mea	
8	86.07 86.00	$1240 \\ 1210$	Whom	toum (Bl	no Nilo)		Aonthly Mea Aean 1912-19		Normal N	lean1929-193	<b>3</b> 9
$\frac{9}{10}$	85.96	1180	1 1	•		Normal	1ean 1912-19	199 17(1)	Feb. 5	10.22	. 3
11	85.92	1150	$\begin{vmatrix} 1 \\ 6 \end{vmatrix}$	10.86	166	Mala	kâl (Whit	e Nile)	10	10.14	3 2 2 2 2
$\begin{array}{c} 12 \\ 13 \end{array}$	$\frac{1}{85.86}$	1130 1110	11	10.48		5	10.81	633	15	9.95	2
13	85.80	i	15	10.46		10 15	10.63	643 62 <b>4</b>	20 25	9•9 <u>2</u> 9•90	$\frac{2}{2}$
15	85.79	1100	$\begin{array}{c c} 20 \\ 24 \end{array}$	10.35	1 .	20	10.55	592	1 1	Monthly Mea	
$\begin{array}{c} 16 \\ 17 \end{array}$	85.81 85.78		l i	Monthly Me	•		10.20	609		lean 1929-19	
18	85.75	1060	11	Mean 1912-19			Monthly Mea lean 1912-193				
19	$\begin{array}{c} +85.72 \\ 85.72 \end{array}$					Motinal W	ican 1912-196	50 O()#	Bahr	el Zerâf	(Kilo. 3)
20 <b>2</b> 1	85.70		[ ]	Sherif (		Hillet	<b>Doleib</b> (Ri	ver Sobât)	((	lauge at Mo	uth)
22	85.67	1020	(Old	l Sennar	Gauge)	3	11.95	91		11.98	
23 24	85.65 85.61		3	9.77		$\begin{vmatrix} & 9 \\ & 14 \end{vmatrix}$	$\frac{11.79}{11.70}$	84 65	$\begin{array}{c c} 18 \\ 28 \end{array}$	11.88 11.84	203 205
$\frac{24}{25}$	85.24		$\begin{array}{c c} 5 \\ 7 \end{array}$	$9.77 \\ 9.77$		19	11.65	58		Monthly Me	
-26	85.49		10	9.77		24	11.62	60	11.	Mean 1912 - 19	
$\begin{array}{c} 27 \\ 28 \end{array}$	85·45 85·42		13	9.79		, , ,	Monthly Me				110
	Monthly Me		$\begin{array}{c c} & 15 \\ & 17 \end{array}$	9.79 $9.79$		Normal A	1ean 1912 - 19		Abu '	Tong (Wi	nite Nile)
	Mean 1912-19		20	9.79	148	Nass	,	r Sobât)		Tonga Gar	uge)
			22	9.82 $9.82$		$\frac{1}{3}$	5·43 5·40		8	12.27	
Kajn	narty (Ma	ain Nile)	24 26	9.82	1		5.37		$\begin{array}{c c} 18 \\ 28 \end{array}$	12·19 12·13	
1	133.67		28	9.82	2   158	5	5:35		1 1	Monthly Me	
2 4	133.63 133.57		11	Monthly Me		$\frac{6}{7}$	5·32 5·30			Mean 1923-19	
5	133.53		Normal A	Mean 1912-1	933 202	8	5.28	80			
9	133.47			zira Mair	Canal	10	5.24		Lake	No (Wh	ite Nile)
10 11	133:43 133:38		Ge			11 12	$5.20 \\ 5.16$		7	13.88	
12	133.32	1190		(Kilo. 1	•	13	5.16	67	$\begin{vmatrix} & 17 \\ 27 \end{vmatrix}$	13.81 13.78	
13	133:30	1160	1 1	15.70		14	5.15		11	Monthly Me	
14 15	133·29 133·28		$\begin{array}{c c} & 1 \\ & 15 \end{array}$	15·70 15·78		15 18	5·15 5·11		11	1ean 1923-19	
17	133:17	1080	15	15.73		19	5.13	66			
18 19	133°08 133°02		Approx.	Monthly Me	an 57	20	5·11 5·12		B	ahr el Gi	nazal
22	132.84		Normal N	Mean 1926-19	<b>33</b> 45	$\begin{array}{ c c c }\hline & 21 \\ 22 \\ \hline \end{array}$	5.17			(At Mout	h)
23	132.74	938	_ ·	• (354	X7:1. \	24	5.17	72	(Suddi	ite Factory	Gauge)
25 26	132.62 $132.60$		- 11 .	seires (Blu	•	25 26	5·14 5·10		7	13.99	34
27	132.59		$\frac{1}{2}$	12·07 12·04	227 222	$\begin{vmatrix} 26 \\ 27 \end{vmatrix}$	5.06		17	13.91	13
28	132.59		$\begin{vmatrix} 1 \\ 5 \end{vmatrix}$	12.04	210	28	5.02	66	27	13.88	•
18	Monthly Me		7	11:96	204		Monthly Me		11	Monthly Me Mean 1923-19	
;ormai A	Mean 1912-19	1010	$      $ $_{6}$	11.93	198	Normain	lean 1929-19	33 87	Horman	чеан 1 740 • 1 У	
-			11						::		
1 1											

## Discharges of the Nils during February, 1934 (continued)

Observed by the Irrigation Department

Day Gauge Reading Month m.	Disch.	Day of Month	Gauge Reading.	Disch. m³, p s.
Bahr el Jebel (K (Lake No Gaug 7   13:88   17   13:81   27   13:78   Approx. Monthly Mean Normal Mean 1923-1933	e) 339 359 356	l	kka (Bahi   13*09     onthly Mean   1931-1933	766 748
Gigging (Bahr el J (Western Chann	Jebel) el)	Mongal	l <b>la</b> (Bahr e	el Jebel)
3   28.78   Approx. Monthly Mean NormalMean 1931-1933  Gemeiza (Bahr el 2 (Eastern Chann 2   28.59   Approx. Monthly Mean NormalMean 1931-1933	164 185 Jebel)	1	11.66 11.65 11.63 11.61 11.58 11.55 onthly Mean	

### Occasional Discharges

## Observed by the Irrigation Department

DATE	River	SITE	GAUGE	Disch.
DATE	ICIVER	SHE	Reading Site	m³. p.s.
			M.	
		River Sobat Tributaries		
3-2-1934 13-2-1934	Khor Fullus	Mouth	11·95 H.Doleib	5 2 2
23-2-1934	,, ,,	,,	11.63 ,,	2
		White Nile Tributaries		
<b>5-</b> 2-193 <b>4</b>	Tonga Cut	Mouth	12:31 Tonga	9
16-2-1934 26-2-1934	,,	<b>"</b>	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	14 7
5-2-1934	,,	Head	12 · 31 ,,	11
5-2-1934 16-2-1934	Khor Lolle	U.S. Tonga Cut	., ,	$\begin{array}{c} 28 \\ 21 \end{array}$
<b>26</b> -2-1934 <b>7</b> -2-1934	Maya Sinyora	Mouth	12·13 ,, 13·88 Lake No	1 <b>6</b> 3
		Bahr el Jebel		
3-2-1934 3-2-1934 3-2-1934	Jebel (west. chann.)	About 5 Kms. U.S. Gigging	28·78 Gigging 28·78 ",	166 166 176

P. Phillips,
Director, Hydrological Service.

Government Fress 11,827 A, 1933-250 ex.

#### Ministry of Public Works, Egypt.—Physical Department.

# REPORT ON THE WEATHER AND STATE OF THE RIVER FOR APRIL 1934

#### The Weather

The principal features were the severe sandstorm on the 1st and widespread thunder-storms on the 17th.

On the morning of the 1st a deep depression arrived over western Egypt, having travelled from the interior of Tripoli with unusually high speed—between 60 and 70 kilometres an hour. Pressure in Egypt fell very rapidly: at Alexandria the pressure during the afternoon decreased to 744 millimetres, which is less than two millimetres greater than the lowest pressure on record there. South-east winds arose, and quickly reached gale force, a velocity of 90 kilometres an hour being registered at Heliopolis. A very opaque sandstorm was the result, and at times the visibility was reduced to less than thirty metres. The weather was warm, the temperature in Cairo reaching 34°C, or 8°C above the normal. The storm continued throughout the greater part of the day, but the trough of the depression passed the Delta during the evening, and the storm then abated. Light showers followed in many places, particularly in the eastern parts of the country, while at Port Said there was a hailstorm. By the next morning the depression was passing over the Syrian desert, and the weather in Egypt became settled and cool, with light north-west winds.

On the 4th a shallow depression was situated off Salum, while there was also a shallow depression in the desert west of Assiût. Warm south-east winds again traversed Egypt, but they were only of moderate strength and within two days the disturbances had passed to the east.

For the next week the temperature was a few degrees above the average for the time of year, and the weather was generally settled.

On the 17th a depression which was situated over the Syrian desert deepened, while there was also a shallow depression near Port Said. Under the influence of a steep gradient of pressure a cool north-westerly current traversed Egypt, and the weather became cloudy. During the evening and night heavy rain fell throughout the Delta, while thunderstorms were reported in many localities. Rain was widespread also on the following day, the largest amount recorded during the two days being 13 millimetres, at Port Said.

Cool weather was maintained for a few days, but on the 23rd, depressions again appeared in the west, and the weather in Egypt became steadily warmer day by day. By the 26th a small depression was approaching Salum, and the winds in Egypt blew from the south-east. At Gîza the temperature reached 40°C (104°F), or 10°C above normal, while in Cairo 38° C was recorded. The secondary passed along the coast of Egypt on the following day, while the main depression had reached Asia Minor. By the 28th Egypt lay in the cold sector of these depressions, fresh north-west winds arrived, and the temperature rapidly fell.

For the month as a whole the barometric pressure was below normal in all districts, while except on the Mediterranean coast the temperature was above normal, but the departures were nowhere large. Rainfall in the southern Sudan was well above normal.

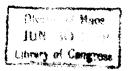


TABLE SHOWING THE DEPARTURES FROM NORMAL FOR APRIL 1934

	 BAROM	ETRIC			ТЕМРЕ	RATURE.				
	Press	URE.	MAX	IMUM.	Mini	MUM.	MAX.+	M18./2.	RAIN	FALL
DISTRICTS	1934.	Difference from Normal.	1934.	Difference from Normal.	1934.	Difference from Normal.	1934.	ifference from Normal.	1934.	Difference from Normal
	 mb.	mb,	°(!.	°C.	°C.	°C.	(C.	°C.	nını.	mm.
I. Mediterranean	 1014.0	0.0	22.9	-0.6	14.2	-0.3	18:6	-0.4	6	+ 2
III. Upper Egypt	1011.6	$\begin{bmatrix} -1.0 \\ -1.1 \\ -0.5 \end{bmatrix}$	29·4 35·3	+0.9 +0.7 +1.2	13:4 16:7 22:2	+0.6 +0.8	26:0 26:0 21:4	+0.8	0	0
V. Red Sea *	 1008.1	()·4	41.0 32.5	+0.5	21.5	():()	27·0 31·6	+1·0 +0·1	() () 2	- i
VI. Central Sudan VII. South Sudan	1007:3 1008:9	$\begin{bmatrix} -0.9 \\ -0.1 \end{bmatrix}$	$\frac{40.7}{36.8}$	-1.0	22·5 23·7	+1.5 + 1.2	30.5	$\begin{vmatrix} +1.0 \\ +0.1 \end{vmatrix}$	$\frac{3}{92}$	+22
				İ				l		l

<sup>\*</sup>For Sudan Only.

L. J. Sutton,

Director, Meteorological Service.

#### State of the River.

Lake Albert at Butiaba fell 6 cms. during the month. Its level on May 1, 1934 was 32 cms. above normal but 61 cms. below that of the corresponding day of last year.

The Bahr el Jebel at Juba remained steady for the first 10 days, and fluctuated above normal thereafter. Except on the 17th the levels were below last year's.

The River Sobat at Nasser rose faster than normally the level which was 36 cms. below normal at the beginning of the month reached normal on the 24th and was above last year's from the 18th onwards.

The White Nile at Malakal rose faster than normally and reached last year's levels at the end of the month.

At Roseires the Blue Nile was practically normal for the first 22 days, then followed a small but steady rise for 3 days and though this was not maintained the levels remained above normal to the end of the month. At Khartoum the Blue Nile was almost steady, a few centimetres below last year's levels throughout the month.

The Main Nile at Kajnarti fell faster than normally, the levels being below both the normal and those of last year.

The differences of the mean levels in April 1934 from those of April 1933 and from the normal 1906\_1930 were:

an	N TO LONG	,		MEAN DIFFEREN	CES OF LEVELS		
STATION.				April 1934 minus April 1933	April 1934 minus Norma		
				 Metres	Metres		
Juba Nasser				 - 0·27	+ 0:06		
Malakal Roseires	•••	•••	•••	 - 0 15 - 0 20 0 00	0:14 † + 0:17 + 0:06		
Khartoum Kajnarti		•••	•••	-0.09 $-0.09$	-0.33 $-0.18$		

<sup>+</sup> Nasser normal is for 1922-1930 only.

By Transfer U. S. Weather Bureou JUN 2 0 1938

## Discharges of the Nile during March, 1934

Observed by the Irrigation Department.

			A SEC. 1 A 1 CAMBREL OF THE COMMON PARK.	ooservea o	y we in	данон Дер	wiimeru.				
Day	Gauge	Disch.	Day	Gauge	Disch.	Day	Gauge	Disch.	Day	Gauge	Disch.
of Month	Reading m.	m³, p.s.	of Month	Reading	m³, p s.	of Month	Reading	m³. p.s.	of Month	Reading	m³. p.s.
	111.										
	I	I		ı f		1	i	i l		i i	
Esna	(D.S. Ba	rrage)	Hassa	nab (Main	Nile)	Ros	eires (con	ıtd.)	Na	sser (con	<i>d.</i> ).
(!	Main Nile	e)	1	10.80	798	11	11.24	130	20	4.80	44
6	72.18	861 788	$\begin{vmatrix} & 9 \\ & 12 \end{vmatrix}$	10.80	$778 \\ 719$	13 15	11·51 11·47	119 116	21	4.78	45
$\begin{array}{c} 13 \\ 22 \end{array}$	$\frac{72.22}{72 \cdot 13}$	806	1.4	10.73	715	17	11.41	115	22 24	4·76 4·71	$\frac{43}{42}$
29	72.09	722	19 23	10.73 10.73	721 750	19 21	11·41 11·37	$\begin{bmatrix} 109 \\ 102 \end{bmatrix}$	28	4.69	38
pprox. Mo	onthly Mear	ı 805	1 1	onthly Mean	i	23	11.35	99	$\begin{array}{c c} & 29 \\ \hline & 31 \end{array}$	4.68 4.74	36 41
1	Aswân		1 1	an 1912-1933		25 27	11·32 11·30	93 91		onthly Mear	
(Marsi	red by S	luices)				29.	11.30	91		an 1929-1933	
	in D.S. G		Tamai	niât (Main	,	31	11.31	102			
1	85:39	885	8	$\begin{bmatrix} 10.31 \\ 10.20 \end{bmatrix}$	$\begin{array}{c} 742 \\ 706 \end{array}$	Approx. Me Normal Me			Gambe	eila (Rive	r Baro)
2133	85:38 85:36	878 871	12	10.22	702		//-		Feb. 16	9•40	56
-4	85.40	890	17 21	10.22	702 885	Mogre	n (White	Nile)	20	9.52	72
5 8	85*42 85*43	889 892	[ ]	IO.21	685 707	3	10.54	600	23 27	9.44 9.38	54 55
$\frac{6}{7}$	85.40	893	1 1	onthly Mean ean 1912-193		11	10.41 10.42	552 550		onthly Mean	
8	85.43	897			•	15	10.49	573		an 1928-1933	
10	85.48	918	Kharte	oum (Blue	Nile)	20	10:43	580 503			
11	85:46	917	1	[ 10.26]	132	Approx. Mo	10.42	562 1 568	Mar. 2 6	9:36 9:34	<b>44</b> 43
12 13	85:45 85:15	917	10	10.18	$\frac{127}{142}$	Normal Me		1	9	9:35	46
14	85.16	916	19	10.17	163				1.3	9:32	37
15	85.41	917	23	10.14	162	Malak	âl (White	e Nile)	A1 1	/YS.*	T) 1
$\frac{16}{17}$	85·15 85·45	917	11	onthly Mean		1	10.49		Akob	• (River	Pibor)
18	85.41	(10)6	Normal Me	an 1912-1933	154	10	10:36	$\begin{bmatrix} -611 \\ -588 \end{bmatrix}$	$\frac{2}{7}$	9.80	1
19 20	85·42 85·40	893 879	Hillet	Sherif (Bl	ne Nile)	15	10.32	554	12	9·64 9·53	$\frac{1}{1}$
21	85:33	879	: 1	Sennar Ge		20	10.29	579	17	9.62	1
22 23	85:34 85:33	846 847	1	9.87	173	25 30	10:23 10:20	559 551	22	9:48	1 ()
21	85*32	846	6	9.87	169	Approx. Mo		n 574	31	9.40	
25	85.32	848	8 10	9.87	167 166	Normal Mea	in 1912-193.	3 577	Approx. M	onthly Mear	ı 1
26 27	85·32 85·32	818 847	13	9.86	165			~	Normal Me	an 1929-1933	3 1
28	85:32	846	1.5	9.85	159	Hillet D	,	ver Sobât)			
29 30	85°02 85°32	815 818	17	9.85 9.81	$\frac{165}{158}$	.1	$\frac{11.59}{11.53}$	56 50	1	el Zerâf (	,
31	85.32		21	9.82	154	, i	11.41	18	(Gg	uge at ${f M}_0$	outh)
	lonthly Mea		27	9.78 9.77	142 140	11	11.40 11.37	56 36	8	11.77	
Normal Me	an 1912-193	3 761	20	9.76	139	2.1	11.37 11:31	26	18 28	11.71 11.66	$\begin{array}{c} 191 \\ 182 \end{array}$
Kaina	irty (Mai	n Nile)	31	9.75	135	20	11.25	35		onthly Mear	
1	132•55	884	1 1 1	onthly Mean an 1912-1933		Approx. M Normal Me:			1	an 1912-1933	
2 6	132:50	858	Hotmai Me	an 1712 1700	, T99	Avoimal MC		V 3 == 1.			
6 7	132:36 132:30	805 796	Gezi	ra Main <b>C</b>	Canal	Nasser	r (River	Sobât)	1	ong (Whi	
8	132.22	761	11	(Kilo. 1·3)		1	5.00	60	(T	onga Gaug	ge)
12	132.17	775	1	(Kilo. 13)   15.78	) - 58	3	4.98	61	8	12.07	402
13 14	132·15 132·15	759 756	1	15.78	60 60	1 5	$\frac{4\cdot 95}{4\cdot 92}$	57 55	18	12.03	357 250
15	132.13	753	17	15.86	59	6	4.92	51	28	11.98	359 i 374
$\begin{array}{c} 16 \\ 19 \end{array}$	$\begin{vmatrix} 132.12 \\ 132.08 \end{vmatrix}$	754 731	17	15°86	57 60	7 8	4 • 92 4 • 90	49 50	1	onthly Mear an 1923-1933	
20	132.05	717		ionthly Mean an 1926-1933		10	$\frac{4.50}{4.90}$	55	, of mar inc		000
21 22	132.00	707 713	Normal Mc		**(/	11	4.90	52 54	Lake	No (Whit	e Nile)
23	131.95	698	Rose	ires (Blue	Nile)	12 13	4.88 4.50	54 50	1	13:78	392
29	131.98	689	1	11.66	151	14	4.88	51	17	13.72	363
$\frac{30}{31}$	131.96	684	$\begin{bmatrix} 3 \\ 5 \end{bmatrix}$	11.63	144 140	15 17	4·88 4·87	50 <b>4</b> 9	27	13.70	371
pprox. M	onthly Mean	n 751	7	11.60	138	18	4.86	46	1	onthly Mean	
Normal Me	an 1912 - 193	3 744	9	11.60	138	19	4.83	45	Normal Me	an 1923 - 1933	308
			11			. [	,	l	1		•

# Discharges of the Nile during March, 1934 (continued)

## Observed by the Irrigation Department

Day Gauge Reading Month m. Disch. m³, p s.	Day of Reading Month m. Disch. m <sup>3</sup> . p.s.	Day Gauge Reading Month m. Disch. m³. p.s.
Bahr el Ghazal (At Mouth) (Suddite Factory Gauge)  7   13.87   23 17   13.82   16 27   13.80   19	Gigging (Bahr el Jebel) (Western Channel) 3   28.62   152 Approx. Monthly Mean 150 NormalMean 1931-1933 188	Mongalla (Bahr el Jebel)       2     11·54     720       6     11·52     728       11     11·54     733       16     11·50     710       21     11·50     700       26     11·50     735
Approx. Monthly Mean         20           Normal Mean 1923-1933         13	Gemeiza (Bahr el Jebel) (Éastern Channel)	Approx. Monthly Mean 719 Normal Mean 1912-1933 676
Bahr el Jebel (Kilo. 3) (Lake No Gauge)	4   28*47   574 Approx. Monthly Mean 575 NormalMean 1931-1933 593	
$\begin{array}{c cccc} 7 & 13.78 & 364 \\ 17 & 13.72 & 359 \\ 27 & 13.70 & 351 \end{array}$	Terrakekka (Bahr el Jebel) 2   12.94   727	
Approx. Monthly Mean 358 Normal Mean 1923-1933 297	Approx. Monthly Mean 710 NormalMean 1931-1933 796	

#### Occasional Discharges

### Observed by the Irrigation Department

Dame	RIVER	Site	(iΛ	UGE	Disch.
DATE	TOLVER	SILE	Reading	Site	m³, p.s.
		White Nile Tributaries	М.		
6-3-1934 5-3-1934 6-3-1934 15-3-1934	Tonga Cut  Khor Lolle  "" "	I +	12:09 12:04 12:09 12:04	Tonga	6 4 6 5
- Company of the Comp		Bahr el Jebel			
3-3-1934 3-3-1934 3-3-1934	Jebel (west. chann.)	About 5 kms. U.S. Gigging	$28.62 \\ 28.62 \\ 28.62$	Gigging	15 <b>9</b> 158 156

P. Phillips,
Director, Hydrological Service.

### Ministry of Public Works, Egypt.—Physical Department.

# REPORT ON THE WEATHER AND STATE OF THE RIVER FOR MAY, 1934

#### The Weather

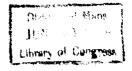
There were two heat waves of moderate intensity during May; otherwise the weather was unusually cool.

Cool north winds prevailed at the beginning of the month, but the advance of a shallow depression along the coast brought a gradual rise in temperature. On the morning of the 4th the depression was situated off Salum, and a gale was blowing from the southwest, the velocity reaching 88 kilometres an hour. The depression passed Mersa Matruh at 15 hour and within an hour the temperature there fell from 30°C to 20°C. By the following morning almost the whole of Egypt was in the cool sector of the depression, and fresh northwesterly winds prevailed. A spell of cool weather ensued, lasting until the middle of the month. During this period winds were mainly from the northeast. From the 8th to the 11th the sky was almost continuously overcast, less than ten hours of bright sunshine being recorded in Cairo in these four days, compared with eleven and a half hours of sunshine which are usually recorded in a single day at this time of the year.

Remarkably unsettled weather was experienced in Upper Egypt and on the Red Sea coast. Skies were overcast for some days; light rain fell in several localities, and thunderstorms occurred at Aswan on the 10th and 12th.

The weather was very unsettled in Lower Egypt on the 13th and heavy rain, accompanied in places by thunder and lightning, was general. At several stations over 10 millimetres of rain were registered, while at Port Said, 28 millimetres fell within two days. After the 14th the temperature rose gradually day by day for a week, reaching a peak on the 20th, when a shallow depression was passing north of Egypt. In Cairo the temperature reached 39°C (102°F). Hot weather was maintained for some days, with winds chiefly from the northeast. On the 26th high pressure was established on the west of Egypt, and the temperature rapidly fell, cool weather then prevailing for the rest of the month. Light rain and thunderstorms again occurred in Upper Egypt and the northern Red Sea.

For the month as a whole the barometric pressure was above normal on the Mediterranean coast, normal in Middle Egypt, and below normal elsewhere. Except in the Central Sudan the temperature was everywhere above normal, though only by small amounts except in Upper Egypt. On account of the heavy storms of a single day (13th), rainfall in Egypt was much above the normal for the month. In the Southern Sudan, rainfall was much in defect. The weather was cloudier than usual at this time of year in Egypt, the duration of bright sunshine averaging 10.5 hours per day compared with a normal of 11.3 hours during May.



TIADID CH	THE PARTY	DEPARTURES	TOAM	NORMAT.	FOR	Miv	1934
LABLE SHU	IWING THE	LIMPARTURES	PROM	INDEMIAL	BUR	IVI A Y	1 :7 - 1 -

	BAROM	ETRIC			Темрен	RATURE.				
	PRESS	URE.	MAXI	MUM.	Mini	MUM.	Max.+	MIN./2.	KAIN	FALL
DISTRICTS	1934.	Difference from Normal.	1934.	Difference from Normal.	1934.	Difference from Normal,	1934.	ifference from Normal.	1934.	bifference from Normal
	mb.	mb.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	min.
1711 C (1 O )	1010.2	+0.9 0.0 -1.0 -0.6 +1.0 -0.6 -0.5	26:0 32:5 40:0 41:8 35:0 38:9 35:0	-0·1 +0·1 +1·9 0·0 0·0 0·8 -0·4	18·2 17·9 22·1 25·4 25·2 23·3 22·8	+0.9 +1.7 +1.3 +0.5 +1.5 +0.3 +0.7	22·1 25·2 31·0 33·6 30·1 31·1 28·9	+0·4 +0·9 +1·6 +0·2 +0·8 -0·2 +0·2	$egin{array}{c} 14 \\ 8 \\ 0 \\ 6 \\ 0 \\ 31 \\ 71 \\ \end{array}$	+12 + 6 0 + 1 - 1 + 9 -46

<sup>\*</sup>Port Sudan Only.

L. J. Sutton,

Director, Meteorological Service.

#### State of the River.

Lake Albert at Butiaba fell one cm. during the month. Its level on June 1st 1934 was 27 cms. above the normal but 62 cms. below that of the corresponding day of last year.

The Bahr el Jebel at Juba fluctuated above normal during the first 15 days and about normal thereafter. Except on the 1st and 7th the levels were below last year's.

The River Sobat at Nasser fluctuated considerably below normal throughout the month. The levels were above last year's during the first ten days but below them thereafter.

The White Nile at Malakal rose at normal rate during the first 12 days, fell slightly until the 18th and rose again at normal rate thereafter. The levels were above normal throughout the month and above last year's during the first fortnight but below them afterwards.

The Blue Nile at Roseires fluctuated about the normal throughout the month the general level being below both the normal and last year's. At Khartoum the Blue Nile fluctuated below normal the levels except for the last few days being almost identical with those of last year.

The Main Nile at Kajnarti was almost steady for the first 20 days then rose slightly until the 27th and fell again afterwards. The levels throughout were below both the normal and last year's.

The differences of the mean levels in May 1934 from those of May 1933 and from the normal 1906-30 were:—

			- 1	MEAN DIFFEREN	MEAN DIFFERENCES OF LEVELS						
STA	STATION.			May 1934 minus May 1933	May 1934 minus Norma						
				Metres	Metres						
Juba Nasser Malakal Roseires Khartoum Kajnarti				- 0.12 - 0.08 + 0.02 - 0.22 - 0.05 - 0.14	+ 0.07 - 0.54 + 0.25 - 0.12 - 0.16 - 0.32						

<sup>†</sup> Nasser normal is for 1922-1930 only.

### Discharges of the Nile during April, 1934

Observed by the Irrigation Department.

		1									
Day	Gauge	Disch,	Day	Gauge	Disch.	Day	Gauge	Disch.	Day	Gauge	D: 1
of	Reading	m <sup>3</sup> . p.s.	of Month	Reading	m <sup>3</sup> . p.s.	of Month	Reading	m³. p.s.	of`	Reading	Disch. m <sup>3</sup> . p.s.
Ionth	nı.	1	Month	m.		Month	m.	1	Month	m.	m . p.s.
					`						
	ł	,		,			1	1		!	J
Fana	(D.S. Ba	rrage)	Kai	narty (co	autd)	Rose	ires (Blue	Nila	Na	con loom	<i>(1)</i>
1 1	Main Nile	_	28	131:57	та). 599	11030	`	•	Na	sser (con	<i>a.</i> ).
			$\begin{vmatrix} 26 \\ 29 \end{vmatrix}$	$\frac{131.57}{131.55}$	591	1 2	11:39 11:40	$\frac{112}{115}$	19	5.38	95
$\begin{array}{c c} & 3 \\ & 10 \end{array}$	72.00	732 734	30	131.53	566	6	11:38	107	21	5:30	88
17	71.96	694	Annroy Me	onthly Mean		8	11:36	101	22 23	5.35   5.35	97
24	71.93	701		in 1912 - 1933		10	11 2	94	24	5.52 5.68	116 $129$
1	onthly Mear	n 712				12	11.32	97	$\frac{25}{25}$	5.75	133
	<b>-</b>	• • •	Hassa	nab (Mair	ı Nile)	14 16	11:34	98	26	5.80	142
	Aswân		1	10.64	721	18	11:31 11:26	95 88	28	5.73	135
∃(Meası	ired by S	duices)	5	10.67	681	20	$11.\overline{25}$	83	29 30	5.78	135
(Aswî	in D.S. G	auge.)	13	10.24	583	22	11:24	86		5.77	135
1	85.27	823	17	10.54	598	21	11.60	142		onthly Mear	
2	85.27	822	22 25	10.58	596 596	$\begin{vmatrix} 26 \\ 28 \end{vmatrix}$	11.64 E 11.57	152 -	Normalme	an 1929 - 1933	89
3	85.28	825	}	10.24	588 200	$\frac{10}{30}$	11.57	$\frac{137}{138}$	Gambe	ila (Rive	r Rorel
4 5	85·28 85·28	$825 \\ 822$	1	onthly Mean			onthly Mear				i varoj
86	85.26	823	Normal Mea	an 1912-1933	608		ean 1912-19.		Mar. 16	9 • 29	33
$\frac{1}{7}$	85.26	822	m	10 / /3T T	TAT'L Y		//-		$\begin{vmatrix} 20 \\ 23 \end{vmatrix}$	9.26	31
: 8	85.26	821	1 1	niât (Main	•	Mogr	en (White	Nile	27	9·26 9·32	30 40
9	85.27	826	$\lfloor \lfloor -\frac{3}{2} \rfloor \rfloor$	10.13	729*	.,	10:37	556	30	9.32	46
10 11	85·27 85·18	825 780	7	10.07	697		10.32	529	Approx M	onthly Mean	
12	85.18	777	$\begin{vmatrix} & 15 \\ 19 & \end{vmatrix}$	9·97   10·06	639 685	1.1	10.53	488	1	an 1928-1933	
$1\overline{3}$	85.17	778	$\frac{1}{23}$	10.00	656	18	10.30	5≥9	Normarine	an 1920-1932	49
14	85.17	779	28	10.01	674	22 26	10.53	487	Apr. 3	9.28	35
15	85.19	786	Approx. Mo	nthly Mean	664		10.26	502	6	9:32	42
16	85.20	785	i ;	an 1912-193			onthly Mean ean 1912-193		10	9.58	79
17 18	85·20 85·20	786 787				Normal Me	: All 1912-190	) <i>020</i>	13	9.64	89
$^{1}$ $\overset{10}{19}$	85.22	794	Kharto	um (Blue	Nile)	Malak	âl (White	Nilo	Akah	(River	Pihort
20	85 • 22	800	1	10.07	146	maiak 5	10.16			,	. 1501)
21	85.17	770	5	10.08	147	10	10.19	552 5 <b>43</b>	5	9.59	1
22 23	85.17	762	12	$9 \cdot 95 +$	127	15	10.18	530	10	9.62 9.56	$\frac{1}{0}$
$\frac{25}{24}$	85·16 85·15	$\begin{array}{c} 761 \\ 762 \end{array}$	17	9.97	131	20	10.25	579	20	10.00	$\frac{0}{2}$
$\frac{25}{25}$	85.16	762	21 25	$\frac{9.94}{9.97}$	131	25	10.30	582	25	10.14	Ĩ
26	85.16	762	1		173	30	10.37	608	30	10.30	1
27	85.15	761		onthly Mean	136		onthly Mean		Approx. Mo	nthly Mean	1
28	85.16	763	Normal Mea	ın 1912-1933	125	Normai Me	an 1912-1933	531	Normal Mea	n 1929-1933	1
29 30	$oxed{85.16}$	763 763	TT:II 4 G	(CT) 0. 1	37.1	Hillet D	oleib (Riv	er Sobât)			
	onthly Mean		1 1	herif (Bl		4	11.23	48	Bahr el	Zerâf (l	Xilo. 3)
	an 1912-1933		(Old S	Sennar Ga	uge)	g ,	11.25	37	(Gau	ge at Mo	uth)
-		1	2	9.68	119	14	$11 \cdot 25$	45			,
najna	rty (Mai	, 1	-1	9.65	117	19	11.31	55	8   18	11:63	$\frac{180}{168}$
1 1	131.99	694	$\frac{7}{9}$	9.66 9.66	122 116	24 29	11.38 11.50	63	28	11.67	165
2 3	132:00 132:00	716 70 <b>7</b>	11	9.65	112		onthly Mean	121	1	nthly Mean	
4	131.95	677	14	9.77	143		ontniy mean an 1912-1933		1	n 1912 - 1933	
6	131.89	664	16	9.76	140			1			
7	131.86	669	18	9.75	143	Nassei	r (River	Sobat)	Abu To	ong (Whit	$(\mathbf{c} \ \mathbf{Nile})$
8	131.84	660	21 23	$ \begin{array}{c c} 9.75 \\ 9.80 \end{array} $	140 154	1	4.82	48	(To	nga Gang	e)
9 10	131·83 131·83	$\begin{array}{c} 662 \\ 678 \end{array}$	25	9.79	149		4.88	52	8	11.94	360
$\vec{i}_1$	131.83	662	28	9.77	146	3 4	4·90 4·88	55 52	18	11.94	337
12	131.82	662	30	9.76	148	5	4.88	$\frac{52}{52}$	28	11.96	336
13	131.80	663	Approx. Mo	nthly Mean	134	7	4.83	48		nthly Mean	
16	131.73	649	Normal Mea	n 1912-1933	139	8	4.84	46	Normal Mea		303
17 18	131.73	647				10	4.86	47		1700	300
<b>2</b> 0	131·74 131·69	$\begin{array}{c c} 649 \\ 638 \end{array}$	Gezir	a Main C	anal	10	4·88 5·00	51 59	Lake 1	No (White	Nile
21	131.66	625	1	Kilo. 1·3)	į	12	5.08	71			•
22	131.59	592	1	15•97 :	1	14	5.24	83	17	13:70	$\frac{370}{217}$
23	131.55	568	2 2	15.97	64 72	15	5.55	80	$\begin{vmatrix} 17 \\ 27 \end{vmatrix}$	13.67 13.67	$\begin{array}{c} 347 \\ 338 \end{array}$
24 25	131.54	570	Approx. Mo			16	5.28	87	ł .	nthly Mean	
$\frac{25}{26}$	131°56 131°58	585 600	Normal Mea		$\frac{-}{24}$	17 18	5:36 -5:40	$\begin{bmatrix} 98 \\ 97 \end{bmatrix}$	Normal Mea	-	
	TOT OO	000	Mormal Mea	11 1720-1733	ź±	10	. O #()	34	moi mai mea	11 1740 • 1 <b>93</b> 3	305
		i	1 .		Į.	i		1	1		

<sup>\*</sup> Discharges from April 3rd onwards are measured at a new site, 3 kilometres upstream the old one.

## Discharges of the Nile during April, 1934 (continued)

Observed by the Irrigation Department

(At Mouth)       (Western Channel)       1         (Suddite Factory Gauge)       3   28.52   146       1         7   13.80   22       Approx. Monthly Mean 173       16   11   16   21   26           17   13.76   23   27   13.76   25       Normal Mean 1931-1933   192   26           Approx. Monthly Mean 23       Gemeira (Bahr et Johel)    Approx. Mo	l <b>la (</b> Bahr e				
Castern Channel   Castern Ch	$\begin{bmatrix} & 11 &   & 11 \cdot 43 &   & 697 \\ 16 &   & 11 \cdot 62 &   & 762 \\ 21 &   & 11 \cdot 57 &   & 733 \end{bmatrix}$				
Bahr el Jebel (Kilo. 3) Approx. Monthly Mean 613 Normal Mean 1931-1933 596	onthly Mean an 1912-1933				
(Tank 210 Glauge)					
7   13·70   345 17   13·67   338 27   13·67   329   Terrakekka (Bahr el Jebel) 1   12·84   690 Approx. Monthly Mean 339 Normal Mean 1923-1933 296   Normal Mean 1931-1933 805					

### Occasional Discharges

## Observed by the Irrigation Department

DATE RIVER									Sit	••						Ga	UGE	Disch.
DATE		17171	sk						1711.	r.						Reading	Site	m³, p.s.
															[	М.		
						_			_				_					
						Ba	hr el	Jeb	el a	nd 7	[rib	utar	ies				1	
9-4-1934	Atem				Jonglei	Site	4							• • •		8.56	Jonglei	<b>2</b> 2 <b>4</b>
10-1-1934	,,				,,	,,	$4 \dots$							• • •		8.56	,,	229
20-4-1934	,,				٠,	,,	4							• • •		$8 \cdot 57$	,,	228
21-4-1934	,,	,			,,	,,	4	• • •	• • •			• • •	• • •	•••		8:58	,,	230
0.4.1094							•)									8.56		95
9-4-1934	,,	•••	•••	• • •	,,	,,	$\frac{3}{2} \dots$	• • •	• • •	• • •	• • •	•••	• • •	• • •	••••	8.56	"	102
10-4-1934	,,	•••	•••	• • •	,,	,,	$\frac{3}{3} \dots$	•••	• • •	•••	• • •	•••	•••	• • •	••••	8.57	,,	98
20-4-1934	,,	•••	•••	• • • •	,,	,,	0	•••	• • •	• • • •	•••	•••	•••	•••	•••	8.58	,,	100
21-4-1934	,,	•••	•••	•••	,,	,,	ð	•••	•••	•••	• • •	•••	•••	•••	• • • •	0 00	,,	100
12-4-1934	Jebel				R. Pole	101								• • •		10.86	Kenisa	298
13-4-1934	,,				,,	,,								• • •			<del></del>	300
18-4-1934	,,,				,,	,,										-		293
19-4-1934	,,		•••		,,	,,	• • •					• • •	•••	• • •		10.88	Kenisa	292
70 1 7004					ъ.											10.07	70	con
16-4-1934	,,	• • •	•••	• • •	Bor .			• • •	• • •	• • • •	• • •	• • •	• • •	• • •	•••	10.97	Bor	632
16-4-1934	,,	•••	•••	• • •	U.S. Al			• • •	• · · •	• • • •	• • •	• • •	• • •	• • •	• • •			654
16-4-1934	,,	•••	• • •	• • • •	D.S.	,,	,, 2	• • • •	• • •	• • •	• • • •	•••	•••	• • •	• • • •			658
16-4-1934	,,	• • •	• • •	• • •	U.S. At		-		• • •	• • •	• • •	• • •	• • •	• • •	•••			610
17-4-1934	,,	•••	•••	• • •	TT 0	٠,	,, [	• • •	• • •	• • •	• • •	•••	• • •	• • •	• • •			582
17-4-1934	,,	• • •	•••	• • •		, ,			• • •	• • •	• • •	•••	• • •	• • •	• • • •			489
17-4-1934	,,	• • •	•••	•••		, , ) T	,, 40	U.	• • • •	• • •	• • •	• • • •	• • •	•••	•••			250
18-4-1934	"	• • •	•••			ike 1	apıu	• • •	• • •	• • •	• • •	• • •	•••	• • •	•••			188
18-4-1934	,,	•••	•••	•••	D.S.	,,	,,	•••	• • •	• • • •	• • •	•••	• • •	• • •	••••			37 <b>6</b>
<u> </u>					, <del></del>										1		l	

P. Phillips,
Director, Hydrological Service.

## Ministry of Public Works, Egypt—Physical Department

# REPORT ON THE WEATHER AND STATE OF THE RIVER FOR JUNE, 1934

#### The Weather

The chief features of the weather during June were the heat wave and Laboobs which occurred and particularly affected Middle Egypt during the second week.

The month opened with cool pleasant weather, the maximum temperature in Cairo on the first day was only 28°C, compared with a normal of 34°C. A shallow depression was situated on that day over the northern Fed Sch. fresh northwesterly, winds prevailed throughout Egypt, and rather unsettled conditions were experienced in Upper Egypt. Dust storms with light rain occurred at Qena. Aswan and the Oases.

The weather then gradually became much warmer, by the 12th, two depressions approaching Egypt from the west, the first travelled quickly along the coast and reached Syria the next morning, but the second moved slowly towards Siwa and caused easterly and southerly winds, and thus the weather became exceedingly hot. The maximum temperature at Giza reached 44°C. By the next morning the depression was centred off Baharia Oasis and the heat wave intensified. The maximum temperature recorded in the Oases, Giza and Helwan was 45°C, (112°F.) being 11°C, above normal for Helwan.

The weather was extremely oppressive during the day and night. Shortly after sunset a very warm haboob from the sentheast sprang up over the scuthern part of the Delta, the temperature which was then 40%, it Cairo rose to 42%, an instantaneous maximum wind velocity of 95 k.p.h. being registered during the baboob at the RAF. Station, Heliopolis. Minor structural datagrapher coursed. Shortly before midnight another strong gust from the southwest took place, and the temperature rose 2% in 5 minutes, (during both haboobs, the pressure jumped suidenly 2 millimetres and then dropped within a few minutes). It is interesting to note that shortly before the second haboob, the temperature in Cairo district was the highest throughout Egypt save Aswan.

The depression finally passed over Cairo about midnight, and a sharp drop in temperature followed when the celd front passed early on the next morning.

Another but less intense heat wave followed with the arrival on the 19th of a very shallow depression from the western desert. The temperature in Cairo district rose to 42° C, but by the following morning this depression had reached Sinai and Egypt was traversed by cool northerly winds, the maximum temperature on that day being 10°C, lower than the preceding day.

Cool weather was enjoyed for a few days, after which the usual summer conditions prevailed and remained until the end of the month.

For the month as a whole, the mean atmospheric pressure was about normal, the deviations nowhere exceeding half a millimetre, while the temperature was above normal in all the districts exept north and central Sudan. The air was much drier than usual in Cairo, while the Sudan rainfall was in excess in northern and central Sudan and below normal elsewhere.

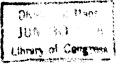


Table showing the Departures from Normal for June 1934

	BAROM	ETRIC			n					
*** **** ****	PRES	SURE.	Max	IMUM.	Mini	MUM.	Max.+	M1N./2.	RAINFALL	
DISTRICTS	1934.	Difference from Normal,	1934.	Difference from Normal.	19 <b>34.</b>	Difference from Normal.	1934.	ifference from Normal.	1934.	Difference from Normal
Marine Control of the	mb.	mb.	°('.	°C.	°C.	°C.	°€.	°C.	mm.	min.
H. Middle Egypt H. Upper Egypt IV. North Sudan V. Red Sea *	1012·4 1011·7 1008·8 1008·1 1006·9 1009·7	+0·3 -0·1 -0·6 +0·1 +0·3 -0·1	28:4 35:8 40:9 40:8 40:0 35:1	+0·2 +0·9 +0·8 -1·1 +1·2 -2·4	20.5 20.0 23.4 25.6 27.5 22.5	+0·2 +1·0 +0·2 -0·2 +1·9 -0·3	24·4 27·9 32·2 33·2 33·8 28·8	$   \begin{vmatrix}     +0.2 \\     +1.0 \\     +0.5 \\     -0.6 \\     +1.6 \\     -1.4 $	0 0 0 35 Drops. 96	$\begin{vmatrix} 0 & 0 \\ 0 & 0 \\ +24 & 0 \\ +47 & \end{vmatrix}$
VII. South Sudan	1011:3	0.0	32.6	-0.6	22.0	+0.8	27:3	+0.1	122	-17

<sup>\*</sup>Port Sudan Only.

#### RAINFALL DATA FOR JUNE 1934

STATION	1934	Diff. from Normal	STATION	1934	Diff, from Normal	
Juba	m·m.  153 136 77 68 39 61	m <sub>m</sub> .  + 31 - 27 - 56 + 30 + 20 + 52	Adis Abâba	m/m.  171 208 83 5 75 Drops.	m/m. + 35 + 80 + 43 + 3 + 44 0	

#### MAHMOUD H. MOHAMMAD Acting Director, Meteorological Service.

#### State of the River.

The level of Lake Albert was still on the down grade, the gauge reading at Butiaba falling six centimetres during the morth. The level on July 1, 1934 was 18 centimetres above the normal but was 65 centimetres below the level on the corresponding day of last year.

The Bahr el Jebel at Juba remained almost steady during the first 20 days and then fluctuated a little above normal for the rest of the month. Except for the reading of the 28th the gauge readings were a few centimetres below those on the same days of last year.

The River Sobat at Nasser fell a little during the first three days and rose at a little more than normal rate thereafter. The levels were below normal throughout the month, below last year's during the first 13 days and above them thereafter.

The White Nile at Malakal rose steadily at normal rate. The levels were above normal throughout the month, below last year's during the first fortnight and above them during the second fortnight.

The Blue Nile at Roseires fluctuated about normal during the first week and above it thereafter. The levels were below last year's during the first five days and above them thereafter. At Khartoum the Blue Nile fluctuated below normal during the first 20 days and above it afterwards. The levels were below last year's during the first half of the month and above them during the second half.

The River Atbara at Khashm el Girba fluctuated above both the normal and last year's levels during the second half of the month.

The Main Nile at Kajnarti fell during the first week, rose slightly until the 11th, fell again until the 17th and rose at normal rate thereafter. The levels were below normal throughout the month, almost identical with last year's until the 11th and below them thereafter.

By Transfer U, S, Weather Bureau JUN 2 0 1938 General Summary.—The Main Rise of the River was a little late in starting but was well established during June.

The Blue Nile, the River Atbara and the White Nile were all above normal before the end of the month and the River Sobat was only a little below normal.

The differences of the mean levels in June 1934 from those of June 1933 and from the normal 1906–1930 were:—

SIM.				1	MEAN DIFFERENCES OF LEVELS							
STA	ATION	Ν.			June 1934 minus May 1933	June 1934 minus Norma						
					Metres	Metres						
Juba		•••	•••		- 0.14	0.00						
Nasser Malakal	•••	•••	•••		+ 0.18	- 0·57 †						
maiakai Roseires	•••	•••	•••	•••	+ 0.01 + 0.37	+ 0.18 + 0.29						
Khartoum		• • • •	• • •		+ 0.14	- ()· () <sup>2</sup>						
Kajuarti					- 0.13	-0.34						

<sup>†</sup> Nasser normal is for 1922-1930 only.

# Discharges of the Nile during May, 1934

Observed by the Irrigation Department.

## Discharges of the Nile during May, 1934 (continued)

Observed by the Irrigation Department

Day of Reading m³.	[ ] of	Gauge Reading m.	Disch. m³. p.s.	Day of Month	Gauge Reading m.	Disch. m³. p.s.		
17   13.76	e) (W 3 Approx.	in (Bahr el estern Chan   29•11   Monthly Mean esn 1931-1933	mel) 210 1 196	Mongalla (Bahr el Jebes 1 12·29   1,090   6   12·45   1,140   12   11·80   833   16   11·88   863   21   11·70   784   26   12·19   1,016				
•	(E:	iza (Bahr e istern Char + 428*85	mel)	1	onthly Mear an 1912-1933			
Bahr el Jebel (Kilo. (Lake No Gauge)	Approx.	Monthly Mear ean 1931-1933	ı 645					
$\begin{array}{c cccc} 7 & & 13.65 & & 31 \\ 17 & & 13.66 & & 32 \\ 27 & & 13.70 & & 33 \end{array}$	1	ekka (Bahi   13:60						
Approx. Monthly Mean 3: Normal Mean 1923-1933 25		Monthly Mear ean 1931-1933	!					

# Occasional Discharges

## Observed by the Irrigation Department.

D <sub>ATE</sub> .	River.	Site.	GAL	Disch	
		{	Reading.	Site.	m.3. pg
~					-
			M.		
14-5-1934	Khor Fullus	Mouth	11,56	H. Poleib	
Manager and the second state of the second sta		S Commission of the Assessment of the Control of th			L

P. Phillips,
Director, Hydrological Service.

#### Ministry of Public Works, Egypt—Physical Department

# REPORT ON THE WEATHER AND STATE OF THE RIVER FOR JULY, 1934

#### The Weather

The weather of July was much damper than usual. Several days especially during the last week were both hot and humid. The maximum temperature registered in Cairo was 40°C, on the 25th and 26th being 5°C, above normal, while at Siwa Oasis, the thermometer rose to 46°C, (115°F.) on both days which is 8°C, above normal.

The summer type of pressure distribution was maintained throughout the month, except on the 4th when a shallow depression formed over Cyprus causing cool fresh north-westerly winds on the coast, with slight rain at Port Saïd. It is interesting to note that rain has never fallen during the month of July at Port Saïd since observations began there in 1887.

The mean atmospheric pressure was everywhere below the normal except over the Mediterranean coast, while the temperature was above the average in Middle Egypt and South Sudan, and below the average elsewhere, the departures from normal are however very small. The mean relative humidity at Helwan was 51% compared with a normal of 46%.

The Sudan rainfall was in excess in Central and South Sudan and deficient elsewhere.

TABLE SHOWING THE DEPARTURES FROM NORMAL FOR JULY 1934

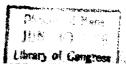
	BARG	BAROMETRIC				χ.				
TATA STATE OF THE	PRE	SSURE.	Max	IMUM.	Misi	MUM.	MAX.+	Min./2.	RAINFALL	
DISTRICTS	1934.	bifference from Normal,	1934.	Difference from Normal.	1934.	Difference from Normal.	1934.	ifference from Normal.	1934.	Difference from Normal
	mb.	mb.	°C.	<u> "C.</u>	°C.	°C.	°C.	°C.	nım.	mm.
I. Mediterranean II. Middle Egypt III. Upper Egypt IV. North Sudan V. Red Sea * VI. Central Sudan VII. South Sudan	1009 1009 1007 1008 1005 1010	$ \begin{array}{c cccc} 2 & -0.2 \\ -0.6 \\ 4 & -0.5 \\ 0 & 0 \\ -0.8 \end{array} $	29·5 35·5 39·9 39·0 40·6 33·0 31·6	$\begin{vmatrix} -0.1 \\ +0.1 \\ -0.2 \\ -0.3 \\ -1.3 \\ +0.1 \end{vmatrix}$	22·5 21·1 23·0 24·9 28·0 21·6 21·4	+0·2 +0·5 -0·9 -0·3 0·0 -0·2 +0·5	26:0 28:3 31:4 31:9 34:3 27:3 26:5	0.0 +0.3 -0.5 -0.2 -0.2 -0.8 +0.3	0 0 18 6 162 187	$\begin{bmatrix} 0 \\ 0 \\ 0 \\ -25 \\ 0 \\ +40 \\ +16 \end{bmatrix}$

<sup>\*</sup>Port Sudan Only.

#### RAINFALL DATA FOR JULY 1934

STATION	1934	Diff. from Normal	STATION	1934	Diff. from Normal
Juba Wau Malakâl El Obeid El Fasher Khartoum	m <sub>m</sub> . 138 202 220 297 61 35	m/m.  - 4 + 14 + 39 + 198 - 52 - 15	Adis Abâba Roseires Wâd Medani Atbara Kassala Port Sudan	m/m. 239 197 150 7 29 6	m/m.  - 40 + 15 + 30 - 13 - 64

MAHMOUD HAMED MOHAMMAD, Acting Director, Meteorological Service.



#### State of the River

Lake Albert has just started to rise. Its level is still about 20 cms, above the normal, but it fell about 60 cms, during the year from the beginning of August 1933.

The Bahr el Jebel at Juba experienced two violent flushes on the 8th and 10th of July, but these died away immediately and for the remainder of the month the levels were nearly steady.

The discharge of the White Nile upstream of the River Sobat remained nearly steady and was about 16% above the normal.

The River Sobat rose steadily and more rapidly than usual throughout the month. Its level was well below the normal at the beginning of the month and equal to the normal at the end.

The White Nile at Malakal rose steadily and at about the normal rate. Its level was above normal throughout the month.

The Blue Nile at Roseires rose very rapidly with some slight fluctuations until the 15th July. After that date the levels fluctuated some what violently but there was no further general rise until the end of the month when the level was practically normal.

The River Atbara also rose very rapidly until the 15th but after this it fell again fairly rapidly with the usual violent fluctuations. At the end of the month the level was well below normal.

The Main Nile at Wadi Halfa rose steadily and rapidly throughout the month with the exception of a few small fluctuations. At the end of the month the level was about 160 cms, above the normal. The excessive rate of rise will not be maintained however and the level during the next 10 or 15 days will remain fairly steady.

The general conclusion is that the rise of the river during July has been very satisfactory.

The differences of the mean levels in July 1934 from those of July 1933 and from the normal 1906-30 were :—

COL A TOLON		MEAN DIFFEREN	CES OF LEVELS
STATION		July 1934 minus July 1933	July 1934 minus Norma
		Metres	Metres
Juba		- 0.09	+ 0.03
Nasser		+ 0.58	0·15 †
Malakal	•• •••	+ 0.14	+ 0.50
Roseires	•• •••	+ 1:37	+ 0.91
	•• •••	+ 1.22	+ 0.25
Khashm et Girba		+ 0.91	+ 0.35
Kajnarti	••••	+ 2.18	+ 1.27
Wadi Halfa		+ 1 - 1.3	十 0.52

+ Na ser normal is for 1922-1930 only.

## Discharges of the Nile during June, 1934

										1	
Day	Gauge	Disch.	Day	Gauge	Disch.	Day	Gauge	Disch.	Day	Gauge	Disch.
of	Reading	m³, p.s.	of Month	Reading	m³, p.s.	of Month	Reading	m <sup>3</sup> . p.s.	of Month	Reading	$\mathrm{m}^3$ , p.s.
Month	m.			m.			III.			111-	
			and the same of th								
	•	•									
Esna	(D.S. Ba	rrage)	Kaj	$oldsymbol{narty}$ ( $co$	ntd).	Wad e	l Aies (Bl	ue Nile)	Nasse	r (River S	lobât)
()	Main Nile	•)	26	132 12	791	20	7.03	873	2	6 • 50	230
5	72.57	1030	. 27	132.14	797	22	6.75	701	3	6.48	226
12	72.62	1050	28	132 • 22	824	21	6.41	582	: 4	6.61	241
19	72.90	1200	30	132.47	894	26 28	$\frac{7.28}{6.86}$	1020 760	$\frac{5}{6}$	6.72	$\frac{257}{278}$
26 	73°04	1260		onthly Mean	701 732	30	6.99	827	13	7.23	328†
Approx. Mo	onthly Mear	i 1140	NormalMea	m 1912 - 1933	1.)2		onthly Mear		23	7 • 90	411†
	Aswân						ean 1912-193		Approx. M	lonthly Mean	35 t
(M		Inimas	River	Athara (	Kilo. 3)					an 1929 - 1933	401
	ared by S in D.S. G		29	11.18	363	·					
` _	m 12.55. (4) [ 85:82	1120	-	onthly Mean		Rose	eires (Elue	Nile			_
1 2	85.81	1130		an 1912-1933			,	•	Gambe	eila (River	Baro)
$\tilde{3}$	85.82	1120				1	12.22	270	1	10.30	194
4	85.83	1120		1 /35 '	3711	3 5	12·16 12·70	$\frac{254}{386}$	. 5	10.20	216
5	85.83	1120		nab (Mair	· ·	, i i	13.02	474		10.78	267
$\frac{6}{7}$	85.83 85.82	1120 1120	3	10.68	$\frac{715}{-100}$	9	12.81	420	13 16	11 · 20 1 11 · 56 1	$\begin{array}{c} 373 \\ 451 \end{array}$
$\dot{8}$	85.82	1120	· 6	10.63	700	11	12.97	481	10	11.21	$\frac{431}{372}$
9	85.82	1120	12 16	10.80 10.88	$851 \\ 912$	13 18	13:4a 13:72	682 778	22	11.52	$\frac{312}{435}$
10	85.82	1120	23	11:34	1180				Approx. M	ionthly Mean	
11	$\begin{bmatrix} 85.86 \\ 85.86 \end{bmatrix}$	1110	27	11:86	1530	Approx. M	ionthly Mean	687		an 1928-1933	496
$\frac{12}{13}$	85:86 85:86	1140 1140	Approx. Me	onthly Mean	988	Normal M	ean 1912-193	33 658	,		• • •
14	85.85	1140	Normal Mc	an 1912-1933	962					<b>~</b>	
15	85.86	1140								Gila (At 1	
16	86.06	1270		10 / /NE. I.	. T.T.1	Mogr	en (White	Nile)	((	Gila Gauge)	)
17	86.11	1300 1310	Tamar	niât (Mair	i Nue)	.3	1 10:06	574	12	7:01	49
18 19	86.14	1310	1	10111.	711	-,	10.59	611	22	$7 \cdot 43$	50
)	86.11	1310	8	10.31	876	1:3	10.75	673			
	86:18	1330	11	10.50	922 1080	. 17	10.08	626		onthly Mean	
?	86.16	133	18 25	10.70	1519	21	11:73	665	Normal Me	an 1929 - 1933	69
23 24	86:16 86:22	1330 1370	•	onthly Mean		28	11.61	722		£.	lov. av.
$\frac{24}{25}$	86.22	1370		an 1912-1933		Approx. M	lonthly Mear	ı 652	R	iver Piro	
26	86+26	1400	Normal Mc	an1/12 1/09	11.7.7	Nermal M	ean 1912-19.	33 625		Gila June	
27	86:28	1400								Gila Gauge	,
28	86.28	1400 1400	Kharte	oum (Blue	e Nile)				. (	ona craugo,	,
$\frac{29}{30}$	86:31	1400	9	10.06	152	Malak	<b>câl</b> (White	Nile)	12	7.0	
	lonthly Mean		$\bar{6}$	10:33	$\frac{215}{215}$	5	10.72	670	20	7.	
	an 1912-193		12	10.45	256	1()	10.81	735	Approx. M	onthly Sican	
			16	10.82	410	1.5	10:04	760	Normal Me	an 1929 - 1933	8
Kaina	rty (Mai	in Nile)	23 27	11:76 11:58	$\begin{array}{c} 1080 \\ 932 \end{array}$	50	11:05	795			
2	± 131·78			onthly Mean		25 27	11.16 11.20	$\frac{853}{882}$	Akah	o (River F	Pibor
$ ilde{3}$	131.68	$\{-630$	1 :	an 1912-193		$\frac{27}{28}$	11.22	866			
4	131:75	646	Mornial Mc	wit 1/16 1/0	- 101	29	11:23	844		11:39 11:54	3 3
5	131.73	643	: 1			39	11.25	876	10	11.72	6
$\frac{6}{7}$	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	$\begin{array}{c} 650 \\ 654 \end{array}$	Hillet	Sherif (B)	${ m lue} \ { m Nile})$	Approx. M	lonthly Mean	n 767	$\frac{10}{20}$	11:94	10
9	131.86	658	(Old	Sennar G	auge)		ean 1912-193		$^{-1}$ 25	12:20	8
10	131.90	684				· · · · · · · · · · · · · · · · · · ·	/ AW 1705		30	12.94	16
11	131.90	688	2	10.19	$\frac{259}{259}$					ionthly Mean	7
$\begin{array}{c} 13 \\ 14 \end{array}$	131.83 131.80	670 670	$\begin{bmatrix} 1 & \frac{\pi}{6} \end{bmatrix}$	10.16	256	LI:Hat T	Ooleib (Riv	ron S. 1.141	NormalMe	an 1929 - 1933	7
15	131.78	665	9	10.46	350	rineti	o rein (ivi)	ver sonay			
16	131.76	657	11	10.65	431	4	1 11.86		Bahr e	el <b>Zerâf</b> (b	Kilo. 3)
17	131.74	640	13 17	10.84	$\begin{array}{c} 477 \\ 655 \end{array}$	11 9	11:97	255		uge at Moi	
18	131.75	646	23	11.28	797*	1.1 19	12.11	281 320			,
19 <b>2</b> 0	$\begin{array}{c c} & 131.76 \\ \hline & 131.79 \end{array}$	661   675	25	10.95	625*	21	12.36	351	8	11.84	164
$\frac{20}{21}$	131.87	694	27	11:54	959*	29	12.46	391	18 28	11.95 12.06	169 169
23	132.00	750	30	11:38	833*	: Anneny	Monthly Mes				
24	132:03	763		outhly Mean						onthly Mean	167
25	132.07	769	Normal Me	ean 1912-193	<b>3</b> 589	Normai M	can i 912-193	o 000	Normaime	ean 1912 - 1933	123
	_		i 1			11			1-1		

<sup>\*</sup> Site transfered to Sennar.

<sup>†</sup> Site transferred to River Sobat Head.

# Discharges of the Nile during June, 1984 (continued)

Day Gauge Reading Month In. Disch. m³. p.s.	Day of Reading Month m.	Disch. m³. p.s.	Day of Month	Gauge Reading m.	Disch. m³. p.s.
Abu Tong (White Nile) (Tonga Gauge) 8   12:10   322	Gigging (Bahr el d (Western Channe	el)	Nimule May14 15	6 (Bahr el	Jebel) 872 831
18     12·20     325       28     12·28     316       Approx. Monthly Mean 322       Normal Mean 1923-1933     292	3   28.85   Approx. Monthly Mean Normal Mean 1931-1933	178 197 230	15 16 16 17 17	10·41 10·39 10·38 10·37 10·37	828 817 799 802 785
Lake No (White Nile)       7     13.70     331       17     13.74     343       27     13.78     345	Gemeiza (Bahr el J (Eastern Channe 2   28.68		18 18 19 19 20	10.35 10.35 10.33 10.33 10.33	799 782 787 797 769
Approx. Monthly Mean 340 Normal Mean 1923-1933 307  Bahr el Ghazal	Approx. Monthly Mean Normal Mean 1931-1933	661 675	20 21 23 23	10:33 10:32 10:30 10:30	780 755 766 762
(At Mouth) (Suddite Factory Gauge)  7   13.80   12 17   13.83   17	Terrakekka (Bahr e  1   13.11   Approx. Monthly Mean Normal Mean 1931-1933	803 861 903	24 24 25 25 26 26	10.30 10.30 10.32 10.32 10.32 10.32	769 775 775 794 785 782
27   13.85   25   Approx. Monthly Mean	Mongalla (Bahr el	795	27 27 28 28	10·34 10·37 10·35 10·36	780 830 792 822
Bahr el Jebel (Kilo. 3)       (Lake No Gauge)       7     13:70     331       17     13:74     333       27     13:78     340	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	775 799 881 777 859	1	onthly Mean in 1914-1933	
Approx. Monthly Mean 334 Normal Mean 1923-1933 300	Approx. Monthly Mean Normal Mean 1912-1933	821 843			

### Occasional Discharges

Observed by the Irrigation Department.

1	Drum	Site.	G <sub>A</sub>	UGE.	Discн.
Dате. •	River.	SHE.	Reading.	Site.	m.3. p.s.
			M.		
		River Sobât and Tributaries			
15-6 1934	Sobât	D.S. Khor Nyanding	9.89	Nyanding Mouth	309
<b>2</b> 5-6-198 <b>4</b>	"	, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,	10.52	,,	402
f5-6-193 <b>4</b>	Khor Nyanding	Mouth	9.89	,,	3
25-6-1934	22 29	,,	10.52	,,	3
11-6-1934	" Twalor	"	7.28	Nasser	2
24-6-1934	<b>&gt;&gt;</b>	"	7.98	,,	4
23-6-1934	" Wakau	"	7:95	,,	3
22-6-1934	" Macap	Head	7.71	Mokwai	3
11-6-1934	" Geni	"	11:59	Akobo	2
21-6-1934	"	,, ··· ··· ··· ··· ··· ··· ··· ··· ···	12.00	;;	1

P. Phillips,

Director, Hydrological Service.

## Ministry of Public Works, Egypt—Physical Department

## REPORT ON THE WEATHER AND STATE OF THE RIVER FOR AUGUST, 1934

#### The Weather

The weather during August was of the usual summer type, except that during the period from the 5th to 14th the temperature in Cairo was generally two to four degrees above normal, and the nights were also warm. The highest temperature reached in Cairo was 40° C. (being 5° C. above normal). This was on the 11th. On that day the weather was extremely hot in Upper Egypt, the thermometer rose at Assiut to 45° C. (113° F.), i.e. 9° C. above normal. This is the highest temperature ever recorded at Assiut during the month of August since observations began there in 1900. At Aswân, the maximum temperature remained at or above 45° C. (4°C. above normal) for five successive days commencing the 10th.

A spell of relatively cool weather then set in on the beginning of the third week and lasted until the 27th. On the morning of the 18th light rain fell at Alexandria. (Rain has not fallen at Alexandria during the month of August since 1916).

Towards the end of the month, the temperature again rose to 2° or 3° C. above normal.

For the month as a whole, the mean atmospheric pressure was above the average on the Meditteranean coast, North and South Sudan, and the Red Sea, while the temperature was above normal in all districts except the Mediterranean Coast and Central Sudan.

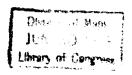
The Air on the coast was much damper than usual, thus at Alexandria, the mean relative humidity was 5 per cent above normal.

The Sudan rainfall was above normal in North and South Sudan and below normal elsewhere. Phenomenal rain fell at Kassala on the 27th, the amount collected in 24 hours was 107 millimetres which is the highest on record for one day's rainfall for that station. This has been confirmed by telegram but full details are not yet available.

TABLE SHOWING THE DEPARTURES FROM NORMAL FOR AUGUST 1934

	BAROM	ETRIC			ТЕМРЕ	RATURE.			T)	
	PRESS	URE.	MAXI	IMUM,	Mini	MUM.	Max.+	Min. 2.	RAIN	FALL
DISTRICTS	1934.	bifference from Normal.	1934.	Difference from Normal.	1934.	Difference from Normal.	1934.	ifference from Normal.	1934.	Difference from Normal
	mb.	mb,	°C.	°C.	°C.	°C.	°C.	°C.	nım.	mm,
II. Middle Egypt III. Upper Egypt IV. North Sudan V. Red Sea * VI. Central Sudan	1010·3 1009·8 1007·9 1009·6 1006·5 1011·1 1012·4	+0.6 -0.1 -0.3 +0.2 +0.6 -0.2 +0.8	30·4 35·5 40·3 38·3 41·2 32·3 31·1	+0·1 +0·7 +0·9 +0·3 +0·6 0·9 -0·3	22·8 21·4 23·4 24·7 29·7 21·6 21·3	-0·1 +0·5 -0·7 0·0 +1·2 +0·6 +0·5	26.6 28.4 31.8 31.5 35.4 27.0 26.2	$\begin{vmatrix} 0.0 \\ +0.6 \\ +0.1 \\ +0.2 \\ +0.9 \\ -0.2 \\ +0.1 \end{vmatrix}$	0 0 0 89 0 139 215	0 0 0 +24 -4 -6 +35

<sup>\*</sup>Port Sudan only.



#### RAINFALL DATA FOR AUGUST 1934

STATION	1934	Diff. from Normal	STATION	1934	Diff. from Normal
Juba Wau Malakâl El Obeid El Fasher Khartoum	m/m.  208 250 186 129 179 71	m/m.  + 83 + 37 - 14 + 13 + 43 - 2	Adis Abâba Roseires Wâd Medani Atbara Kassala Port Sudan	m/m.  231 178 105 50 235 0	m/m.  - 68 - 33 - 41 + 10 + 107 - 4

MAHMOUD HAMID MOHAMMAD, Acting Director, Meteorological Service.

#### State of the River

Lake Albert at Butiaba rose 13 centimetres during the month. Its level on September 1, 1934, was 25 centimetres above the normal but 47 centimetres below that of the corresponding day of last year.

The Bahr el Jebel at Juba rose with fluctuations and from the 8th to the end of the month was above both the normal and last year's levels.

The River Sobat at Nasser rose faster than normally. The level which was 2 centimetres below normal at the beginning of the month was 28 centimetres above it at the end of the month. It was much above last year for the whole month.

The White Nile at Malakal rose at normal rate. The levels throughout the month were above both the normal and last year's.

The Blue Nile at Roseires rose very rapidly with sharp fluctuations until the 25th when the level reached 22.04 metres (2.86 m. above the normal) then fell sharply thereafter. The maximum level is the highest recorded since 1908. At Khartoum the Blue Nile rose steadily and rapidly. The levels were much above both the normal and last year's.

The River Atbara at Khashm el Girba rose rapidly with the sharp fluctuations until the 23rd when the level reached 16:90 m. (2:70 m. above normal) then fell faster than normally.

The Main Nile at Wadi Halfa was nearly steady during the first and third weeks but rose at a much faster than normal rate during the rest of the month. The gauge reading on the 31st was 8.95 metres which is the highest recorded since 1894 when the maximum was 8.96 metres.

The feature of the month has been the phenomenal rise of the Blue Nile and the River Atbara which has resulted in very high levels being reached in Egypt by the end of the month.

The differences of the mean levels in August 1934 from those of August 1933 and from the normal 1906-1930 were:—

ort a	ATION		MEAN DIFFERENCE	CES OF LEVELS
817	TION		August 1934 minus August 1933	August 1934 minus Norma
		 	Wetres	Metres
Juba Nasser Malakal Roseires Khartoum Khashm el Wadi Halfa		 	+ 0·20 + 0·40 - 0·23 + 1·41 + 0·77 + 1·15 + 1·71	+ 0.18 + 0.12 † + 0.20 + 1.27 + 0.43 + 0.79 + 0.84

† Nasser normal is for 1922-1930 only.

By Transfer U, 8, Weather Bareau JUN 2 0 1938

# Discharges of the Nile during July, 1934

Observed by the Irrigation Department.

		**************************************		The state of the s	Property of the second of the						
Day of Month	Gauge Reading	Disch. m³, p.s	Day of Month	Gauge Reading	Disch, m³, p s	Pay of Month	Gauge Reading	Disch m <sup>3</sup> , p.s.	Day of Month	Gauge Reading	Disch.
				111.			in.			m.	
	m c Pa	\	D:	A 41 (Te	7:1 9\	YE7_ 3 3		37:1	D'ann 6	 	17 15
	( <b>D.S. Ba</b> Main Nile		l I	Atbara (E   11:20	хно. э) 573	1	Aies (Blu	1e Niie)     845	1	Sobat (A)	_
•	73·22	1380	$\begin{vmatrix} 1 & 3 \\ 7 & 7 \end{vmatrix}$	10 96	386	2	$\begin{bmatrix} 6.95 \\ 7.34 \end{bmatrix}$	1010		isser Gaug	
$\frac{3}{10}$	73.44	1520	12	11.46	750	6	7.35	1050	3	8.48	511
17	73.80	1700	17	12.12	1760	7	8,20	1570	$\begin{array}{c} 13 \\ 23 \end{array}$	8.92   9.24	$\frac{584}{629}$
24	74.81	2680	22 29	12.62	)230 1190	8 9	8.02	1430 1440	İ	'	
31	77.02	5090	1 1	onthly Mean	1020	10	8.83	1990	1	onthly Mean	589
,pprox. Mo	onthly Mean	2250		an 1912-1923	613	11	9·24 9·31	2290 2460	Normai Mea	m1929-1933	559
						14	9	2530			
	Aswân		Hassa	nab (Main	Nile)	15	10.52	3850	Gambe	ila (River	Baro)
(Measu	ired by Sl	luices)	2	12.15	1550	17 19	10.88 10.26	4140 3 <b>43</b> 9	June 26	11.66	463
(Aswâ	in D.S. Ga	uge.)	6	12.01	1630	21	10.20	4020	20	12.02	568
1	86:33	1450	11  5	12:44 13:07	$\frac{1750}{2330}$	23	11.26	4200	Approx M.	onthly Mean	370
$^2$	86.40	1460	21	14.34	4280	25	10.94	2630	i	in 1928-1933	496
3	86.44	1480	28	14.75	4860	27	11.28	4030	i	111 1720-1700	<b>3.</b> 117
4 5	86.43 86.49	$\begin{bmatrix} 1480 \\ 1520 \end{bmatrix}$	Approx. Me	nthly Mean	3040	29 31	10.33 11.33	3740 4090	ì		
6 6	86.20	1530		an 1912-1933	2250	1	onthly Mean	2840	July 3	12.03	554
7	86.20	1530						1	7	12.20	746
8	86.20	1530	Tamar	i <b>ât</b> (Main	Nile)	Mormat Me	ean 1912-193	3 2.000	11	13.32	1020
9	86.65	1640		11:46	1730	DA.	47372 A.	3703	14 17	13·52   13·02	$\begin{array}{c} 1090 \\ 934 \end{array}$
10 11	86.82 86.90	17 <b>7</b> 0 1830	$\frac{4}{8}$	11 40	1820	Wogre	n (White	Nile)	20	13.21	1010
12	86.91	1840	12	11.91	1970	3	11.73	774	24	13.44	1070
13	86.90	1830	17	13.04	3180	7 11	11.86	766	28	13:36	1020
14	86.91	1840	23	13.78	3959	16	$12.24 \\ 1.22$	729 616	31	13.07	899
$\frac{15}{16}$	86.94 86.94	$\frac{1860}{1850}$	30	14.10	4740	22	14.00	857	Approx Mo	nthly Mean	913
17	86.94	1850		nthly Mean	3040	29	14.33	893	NormalMea	n 1928-193 <b>3</b>	742
$\tilde{18}$	86.94	1850	Normal Me	an 1912-1933	2480	Approx. Mo	onthly Mean	774	l I		
19	86.94	1850				Normal Me	ean 1912-193	3 584	River	Gila (At I	Month
$rac{20}{21}$	87.49	2090	Kharto	oum (Blue	Nile)					•	_
$\frac{21}{22}$	87·42 87·64	2260 <b>244</b> 0	2	11.68	972	Malak	âl (White	Nile)	(0	lila Gauge	)
$\overline{23}$	87.92	2680	6	11.76	1030	1	11.26	872	2	8.45	56
24	88.22	<b>295</b> 0	$\begin{array}{ c c c c }\hline & 10 \\ 15 \\ \end{array}$	12·10 13·19	$\begin{array}{c} 1200 \\ 2660 \end{array}$	$\frac{1}{2}$	11.29	875	12	9·35 9·81	53
25 90	89.15	3900	$\begin{vmatrix} 10 \\ 21 \end{vmatrix}$	14.09	$\tilde{3}730$	3	11.32	883	ا شند	9.91	47
$\begin{array}{c} 26 \\ 27 \end{array}$	89·44 89·49	$\frac{4150}{4210}$	28	14.42	<b>4</b> 230	4	11.34	879	Approx. Mo	nthly Mean	46
$\frac{2}{28}$	89.47	4120	Approx. Me	onthly Mean	26 <b>2</b> 0	5 6	11.37	910 9 <b>2</b> 9	Normal Mea	ın 1929-1933	76
<b>2</b> 9	89.57	4210	Normal Me	an 1912-1933	1940	7	11.39	920			
30	89.89	4660			:	8	11.40	929		<b></b>	
. 31	90.22	5120	Senn	ar (Blue l	Nile)	9	11.43	953	1	ver Pibo	
	onthly Mean			6:11	846	10	11.44 11.46	$\begin{array}{c} 927 \\ 948 \end{array}$	(U.S.	Gila June	tion)
normal Me	an 1912-1933	1710	4	6.40	1090	13	11.20	982	(0	ila Gauge	•)
			$\begin{vmatrix} 1 & 7 \\ 9 & 9 \end{vmatrix}$	6.54 7.00	$\begin{array}{c} 1270 \\ 1490 \end{array}$	14	11.21	973	,	8:45	33
Kaina	ntes (Mois	. XT:1. V	ll ii	7.94	<b>22</b> 90	16	11.55	995	$1\overline{2}$	$9 \cdot 35$	58
rralna	rty (Mair	a Mile)	14	8.19	2440	20	11:57	967	22	9.81	82
1	132.57	937	17	9.73	3710	25 30	11.66 11.72	996 <b>1</b> 030	Approx Ma	onthly Mean	71
2	132.67	957	19	9.10	3390	-	onthly Mean			in 1929-1933	20
$rac{4}{5}$	133·34 133·80	1200 1380	$\begin{vmatrix} 21 \\ 23 \end{vmatrix}$	$9.45 \\ 9.72$	$\frac{3600}{4160}$	11	an 1912-1933	1	,		
6	134.15	1560	$\frac{25}{25}$	$9 \cdot 72$	3750	Motinal Mc	an 1712-1700	312			
8	134.56	1810	28	9.79	3700	TT:II-4 D	alaik (Dia	G-1-44	Akob	o (River I	Pibor)
9	134.75	1910		onthly Mean		Η	oleib (Riv	. 1			
10 11	134.97	2000	Normal Me	an 1912-1933	2150	$\begin{vmatrix} 4 \\ 0 \end{vmatrix}$	12.61	420	10	13·41 14·14	32 52
12	135.08 135.05	2070 2050		- 35		$\begin{vmatrix} 9 \\ 14 \end{vmatrix}$	$begin{pmatrix} 12.70 \ 12.82 \ \hline \end{bmatrix}$	450 469	15	14.20	67
15	134.80	1900	1	a Main (	anai	19	12.90	492	20	14.68	89
16	134 81	1890	1 1	(Kilo 1·3)		24	12.88	509	25	15.00	110
17	134.98	1950	21	15.39	41	29	12.95	518	30	15.32	138
	onthly Mean		Approx. M	onthly Mean		11	lonthly Mean	1	Approx. Me	onthly Mean	75
Normal Me	an 1912-1933	1840	Normal Me	an 1925-193	3 22	Normal Me	an 1912 - 1933	492	Normal Me	in 1929-1933	24
NT .								l	1		
Note.—For	stations from	m Sennar te	o Kajnarty in	clusive, the i	normal disc	charges of th	be natural ri	ver have be	en computed	and from t	hese have

Note.—For stations from Sennar to Kajnarty inclusive, the normal discharges of the natural river have been computed and from these have been deducted the effects of a standard regulation at Sennar.

# Discharges of the Nile during July, 1934 (continued)

Day of Month	Gange Reading m.	Disch. m³. p.s.	Day of Month	Gauge Reading m.	Disch. m <sup>3</sup> , p.s.	Day of Month	Gauge Reading m.	Disch. m³. p.s.
	l <b>Zerâf</b> ( ige at Mo		(	n <b>r el Gha</b> At Montl)		1	'. <b>a (</b> Ba <b>hr</b> el tern Chan	
$\begin{bmatrix} 8 \\ 18 \\ 28 \end{bmatrix}$	12:18   12:28   12:37	$\begin{array}{c} 179 \\ 176 \\ 174 \\ \end{array}$	(Suddia 7 17 27	13.95 13.91 13.91 13.96	tange) 41 20 28	1 1	28·86   onthly Mean an 1931-1933	692
	ın 1912-1933		! !	onthly Mean an 1923-1933		Tomolo	k <b>ka</b> (Bahr	ual Taball
	ong (Whi onga Gaug	ge)	1 :	<b>l Jebel (</b> ke No Gau	- 1	1	13.40	924
8 18 28	$12 \cdot 40 \mid 12 \cdot 50 \mid 12 \cdot 53 \mid$	312 324 325	7 17	13.86 13.85	311 319	1	onthly Mean in 1931-19 <b>33</b>	
Approx. Mo Normal Mea	nthly Mean in 1923-1933			13°88   onthly Mean an 1923-1933	i	Mongal	<b>la</b> (Bahr e	l Jebel)
Lake 1	No (White 13:86   13:85	9 Nile) 365 337		<b>g (</b> B <b>ahr</b> el stern Chan	, ,	$egin{array}{c} 1 \\ 6 \\ 11 \\ 16 \\ 21 \\ \end{array}$	11.90 12.18 12.27 11.86 11.84	893 1020 1070 864 869
27	13.88	317	3	29.08	223	26	11.82	835
Approx. Mo NormalMea	•			enthly Mean an 1931-1933	$\begin{array}{c} 220 \\ 246 \end{array}$		onthly Me <mark>a</mark> n in 1912-1933	

### Occasional Discharges

Observed by the Irrigation Department.

T)	River.	Site.	GAU	GB.	Disch.
DATE.	IUIVER.	SITE.	Reading.	Site.	m.3. p.s.
	,		М.		·
		River Sobât and Tributaries			
5-7-1934	Sobât	D.S. Khor Nyanding Junction	10.97	Nyanding Mouth	460
5-7-1934	,,	" " " ,	11.30	,,	522
)5- <b>7-</b> 193 <b>4</b>	"	" " " "	11.55	,,	556
5-7-1934	Khor Nyanding	Mouth	10.97	,,	- 3
5-7-1934	" "	», ··· ··· ··· ··· ··· ··· ··· ··· ··· ·	11.30	,,	- 3
25-7-1934	" "	"	11.55	,,	<del>-</del> 3
4-7-1934	" Twalor	"	8.55	Nasser	<b>-</b> 5
14-7-1934	,, ,,	"	8.94	,,	- 6
34-7 <b>-</b> 1934	" "	"	9.26	,,	<del>-</del> 5
3-7-1934	" Wakau	,,	8.49	,,	<del>-</del> 6
13-7-1934	» . »	,,	8.92	,,	- 9
23-7-1934	" "	.,	9.24	,,	- 17
2-7-1934	" Macap	Head	8:35	Mokwai	5
1-7-1934	" Geni	"	13.05	Akobo	5
1-7-1934	" "	"	14.24	,,	4
21-7-1934	",	"	14.74	,,	3
I-7-1934	$\Lambda$ kobo	Mouth	14.24	,,	17
21-7-19 <b>34</b>	,,	"	14.74	,,	10
1-7-1934	$\mathbf{A}\mathbf{g}\mathbf{w}\mathbf{e}\mathbf{i}$	"	_		11
31-7-1934	,,	About 5 Kms. from Mouth		-	62

Correction.—The last discharge of Hillet Doleib published in June Monthly Report was observed on May 29th and not on May 30th.

P. Phillips,

Director, Hydrological Service.

Govt. Press 8271-1934-250 ex.

#### Ministry of Public Works, Egypt—Physical Department

# REPORT ON THE WEATHER AND STATE OF THE RIVER FOR SEPTEMBER, 1934

#### The Weather

The weather of September was as usual free from any large disturbances. Temperature was however variable. The first five days were rather warmer than usual. The maximum temperature registered at Helwan on the 4th was 39° C. being 6° C. above normal. After this a cool spell set in and lasted until the end of the second week. On the 15th a shallow depression developed over Cyprus. Cool air from the north-west traversed the coast and a minor thunderstorm took place at Salum.

Settled conditions then prevailed until the 28th; on that day the pressure became relatively low over the northern Red Sea, light rain fell at Tor and Port Said.

Throughout Egypt, the pressure was above normal, and in the Sudan except in the Red Sea it was below normal, but these deviations were, as usual in September, very small.

The temperature was slightly above normal everywhere except in Upper Egypt and North Sudan.

The Sudan rainfall was above normal in North and Central Sudan and below normal elsewhere.

(Details of the phenomenally heavy rainfall at Kassala-107 millimetres on August 27th have been received. The storm lasted from 6.30 to 8.30 in the evening and a number of houses collapsed.)

TABLE SHOWING THE DEPARTURES FROM NORMAL FOR SEPTEMBER 1934

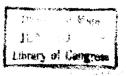
	BAROM	ETRIC			ТЕМРЕ	RATURE.					
Through the company	PRESS	PRESSURE.		MAXIMUM, MIN		MUM.	Max.+	MIN. 2.	RAIN	RAINFALL	
DISTRICTS	1934.	Difference from Normal,	1934.	Difference from Normal.	1934.	Difference from Normal.	1934.	Difference from Normal.	1934.	Differens from Normal	
	mb.	mb.	°('.	°C.	°C.	°(!.	°C.	°C.	mm.	min.	
II. Middle Egypt III. Upper Egypt IV. North Sudan V. Red Sea * VI. Central Sudan	1013·8 1013·5 1011·1 1008·8 1010·2 1010·8	+0.6 +0.3 +0.3 -0.5 +0.6 -0.7 -0.6	29·7 32·2 36·8 40·1 38·7 35·1 33·2	+0·2 +0·1 -0·4 +0·4 +0·9 +0·2 +0·5	22·1 19·6 21·5 24·7 26·5 21·5 21·9	+0·2 +0·5 -0·8 -0·3 +0·3 +0·4 +0·9	25.9 25.9 29.2 32.4 32.6 28.3 27.6	+0·2 +0·3 0·6 0·0 +0·6 +0·3 +0·7	$egin{pmatrix} 0 \\ 0 \\ 0 \\ 34 \\ 0 \\ 78 \\ 110 \\ \end{matrix}$	$\begin{vmatrix} 0 & 0 \\ 0 & 0 \\ +14 & 0 \\ +4 & -28 \end{vmatrix}$	

<sup>\*</sup>Port Sudan only.

RAINFALL DATA FOR SEPTEMBER 1934

STATION	1934	Diff. from Normal	STATION	1934	Diff. from Normal
	m/m.	m/m.	:	m/m.	m/m.
Malakâl	 54 163 112 118 5 55	$ \begin{array}{rrrr}  & -52 \\  & 0 \\  & -32 \\  & +41 \\  & -25 \\  & +37 \end{array} $	Adîs Abâba	193 193 32 0 83 0	$\begin{vmatrix} + & 2 \\ + & 41 \\ - & 33 \\ - & 6 \\ + & 27 \\ 0 \end{vmatrix}$

MAHMOUD HAMID MOHAMMAD, Acting Director, Meteorological Service.



#### State of the River

Lake Albert at Butiaba fell four centimetres during the month. Its level on October 1st. 1934 was 14 centimetres above the normal but 59 centimetres below that of the corresponding day of last year.

With the exception of the flush on the 6th the Bahr el Jebel at Juba fell throughout the month. The levels were above normal during the first eight days and below them thereafter.

The River Sobat at Nasser rose steadily at a little slower than normal rate. The levels were above both the normal and those of last year.

The White Nile at Malakal rose at normal rate. The levels were above normal, but below those of last year.

The Blue Nile at Reseires continued its rapid fall until the 10th. On this date it had fallen nearly four metres in sixteen days. This was a phenomenal and very welcome fall from the very high level recorded on the 25th August. After the 10th September the levels rose with fluctuations until the 22nd when the gauge reading was 19.52 metres 1.45 metres above the normal. After the 22nd the level fell again with some fluctuations until the end of the month but remained considerably above the normal.

At Kharteum the Blue Nile reached its maximum level on September 2nd when the gauge reading was 16.52 metres, 87 centimetres above the normal. After this it fell rapidly until the 14th, remained nearly steady until the 26th and then fell again until the end of the menth. The level was 22 centimetres above the normal on September 30th.

The River Athara continued its rapid fall at Khashm el Girba until September 9th. On this date it had fallen more than  $3\frac{1}{2}$  metres in seventeen days. After September 9th the levels fluctuated but on the average still continued to fall though more slowly until the end of the month.

The Main Nile at Wadi Halfa continued to rise till the 4th when it reached its peak 9.07 metres, 135 centimetres, above normal, which is the highest recorded since the erection of the gauge (1890). It then fell rapidly until the 27th and rose again a little till the end of the month. The levels were above normal throughout the month and were on the average 28 centimetres above last year's levels.

The most conspicuous feature of the levels of the river during September was the extremely rapid fall of both the Blue Nile and the Atbara during the first half of the month. This fall was of very great value as a continuance of the very high levels reached on August 24th and 25th would have produced very dangerously high levels in Egypt. The rapid fall was checked during the second half of September but no very high levels were reached.

It is interesting that at Wadi Halfa the maximum level was the greatest ever recorded on the gauge since it was established in 1890. It is probable that the maximum discharge in 1892 was greater than the maximum in this year and the cause of the higher level this year is probably the formation of sand banks at the upstream end of the Aswan Reservoir.

The Differences of the mean levels in September 1934 from those of September 1933 and from the normal 1906–1930 were:—

OTH A SHI CONT	MEAN DIFFEREN	MEAN DIFFERENCES OF LEVELS					
STATION	Sept. 1934 minus Sept. 1933	Sept. 1934 minus Norma					
	Metres	Metres					
Nasser Malakal Roseires Khartoum Khashm el Girba *		$ \begin{array}{r} -0.16 \\ +0.27 \\ +0.24 \\ +0.29 \\ +0.28 \\ -0.07 \\ +0.70 \end{array} $					

† Nasser normal is for 1922-1930 enly.

By Transfer U, 8, Weather Bureau JUN 2 0 1938

# Discharges of the Nile during August, 1934

	- E & Transfer - 100 - 1		A 200 (A 100 and 100 a						W. F		
Day of Lonth	(lauge Reading	Disch. m³. p.s.	Day of Month	Gauge Reading	Disch. m³. p.s.	Day of Month	Gauge Reading	Disch. m³. p.s.	Day of Month	Gauge Reading	Disch. m <sup>3</sup> . p.s.
	m.			m.			m,	·		III.	
	(D.S. Ba		1	niât (Mair	•	Wad	el Aies	(contd.)	River	Gila (At	Mouth)
•	Main Nile		5	14:36	5240	22	13.74	7730	((	Jila Gauge	·)
7	77.40	$\frac{5430}{5720}$	$\begin{vmatrix} 10 \\ 14 \end{vmatrix}$	14.92 15.43	$6120 \\ 7210$	24	13.91	7750	2	10.03	
$\frac{14}{21}$	79.53	9780	20	15.75	7850	$\begin{array}{c c} 26 \\ 28 \end{array}$	14:35 14.28	8350 8120	12	10.03	-15 - 18
$\overline{28}$	79.64	9600	26	16.01	8420	50	13:97	7610	22	10.50	- 11
prox. Me	onthly Mean	7450	$\begin{vmatrix} 28 \\ 31 \end{vmatrix}$	16·20 16·30	8479 8930	Annray M.	onthly Mear	'	Apriex. M	onthly Mear	91
	A		1 [	onthly Mean		1 1	ean 1912-19.	:	1 7 7	an 1929-1933	
/ Manage	Aswân	luiosal	11.	ean1912-1933		, , , , , , , , , , , , , , , , , , , ,	can 1912-19	, , , , , , , , , , , , , , , , , , ,			
	ured by S ân D.S. Ga					B0	/1577 *i	3711			
	90°33	5340				Mogre	en (White	Nile)	R	iver Pib	or
$\frac{1}{2}$	90.23	5140	Kharte	oum (Blue	Nile)	4	14.41	626	(U.S.	Gila Jun	ction)
$\bar{3}$	90.21	5140	$\begin{vmatrix} 1 & 3 \end{vmatrix}$	14.42	4150	9	15.04	713		Tila Gauge	
$\frac{4}{2}$	90.30	5250	$\frac{7}{12}$	14·94 15·54	5400 7220	i 1	onthly Mear				,
5 6	90:38	5370 5370	18	15.96	7380	Normal Me	ean 1912-193	33 621	12	10103 1	138 205
$\ddot{7}$	90.34	5290	25	16:20	7840	i . i :		:	22	1007.0	
8	90.32	5240	27	16.36	8020	Malak	âl (White	Nile)	A name of M	onthic Mean	
$\frac{9}{10}$	$90.28 \\ 90.26$	5190 5120	30	16.46	8570		11.78			ontiny Mean on 1029-1033	
11	90.35	5310	1 1	onthly Mean an 1912-1933	6790 5600	5 10	11.86	1040 1070	Normai ne.	m 1 ''2 7 - 1 ''3 3	
12	90.21	5570	Mornial Me	an 1912-1950	• 5000	15	11.91	1100			
13 14	$90.72 \\ 90.98$	5800 6250				20	11.99	1140	Akoh	• (River	Pibor)
15	$91 \cdot 29$	6690	Senr	nar (Blue I	-	$\begin{array}{ccc} 1 & 25 \\ 1 & 30 \end{array}$	12·07 12·17	$\frac{1100}{1200}$			ŕ
16	91.67	7540	1	9.82	3700				10	15.74 16.13	180 196
$\begin{array}{c} 17 \\ 18 \end{array}$	92·14 92·45	$\begin{array}{c} 8600 \\ 9210 \end{array}$	$\frac{4}{6}$	10.75 11.01	$\frac{4810}{5320}$		onthly Mean		$\frac{10}{15}$	16:53	250
$\frac{10}{19}$	92.58	9590	8	11.37	5720	Normai Mei	an 1912-1933	1050	20	17:00	253
20	92.58	9550	11	12.40	7390			:	25 30	17°26 17°40	281 283
21	92.54	9470	$\begin{array}{ c c c c }\hline & 13\\ 15 \\ \hline \end{array}$	12·12 12·46	$\frac{6810}{7250}$	Hillet D	oleib (Riv	er Sobât)			
$\frac{22}{23}$	$92.52 \\ 92.48$	9420 9820	18	12.09	6720	4	1 13:12	551		onthly Mean	
24	92.44	9250	20	12.38	7190	9	13.19	564	Normai Me.	an 1929-1933	73
25	92.43	9250	$\begin{array}{ c c c c }\hline & 22 \\ 25 \\ \end{array}$	12.70	7340	14	13:27	585			
$\frac{26}{27}$	92.48	9260 9 <b>47</b> 0	2.7	13·20 13·78	$8050 \\ 8700$	2() 24	13°39 13°48	$\begin{array}{c} 633 \\ 652 \end{array}$	Bahr e	l Zerâf (	EH. 91
$\frac{2}{28}$	92.74	9830	29	13.43	8340	29	13.58	684	1		
29	92.89	10200	31	13.10	7560	Annroy M	onthly Mear		· (Ga)	ige at Mo	utti)
$\frac{30}{31}$	$93.06 \\ 93.16$	10500 10700		onthly Mean an 1912-193;			an 1912 - 1933		8	12.45	180
	lonthly Mean		Trottmar inc	an 1712-170	5500	·	uni / 1 2 - 1 / 00	. (/////	19 28	12.59 12.70	$\frac{182}{187}$
-	an 1912-1933					D: C	N = 1 = 4 / A :	. TT 18 1			
			i 1	a Main			Sobat (A	•		onthly Mean in 1912-1933	
River	Atbara (1	Kilo. 3)	'	(Kilo 1°3)		(3):	isser Gau	ge)	: Horman sice	m 1912 1933	147
4	12.98	1360	2	16.44	89	3 13	9.57	670	!		
<b>8</b> 14	13.75 14.63	<b>22</b> 00 <b>35</b> 60	$\frac{2}{16}$	16.44 15.56	89 <b>4</b> 8	23	9·82 10·09	682 721	Abu To	ong (Whi	te Nile)
19	14.53	2160	16	15.56	49				1	mga Gaug	
28	15.23	3670	Approx. Me	onthly Mean	57	1	onthly Mean In 1929 - 1933				
30	15.20	4010	Normal Me	an 1925-193		Mornialmes	101777-1799	645	1 19 S	12.61 12.72	$\frac{319}{313}$
Normal Mei	onthly Mean an 1912-1933	$\begin{array}{c} 2770 \\ 2060 \end{array}$						_	28	12.83	$\frac{313}{325}$
			Wadel	Aies (Blu	e Nile)	Gambe	<b>ila</b> (River	r Baro)	Approx. Me	onthly Mean	
	nab (Mair	ı Nile)			, i	3	12.60	798	ı	ın 1923-1933	299
$\frac{3}{7}$	14.80	4940	$\frac{2}{4}$	$\begin{bmatrix} 11.51 \\ 12.04 \end{bmatrix}$	4380 5190	7	12.78	839		,20 1,00	
$rac{7}{12}$	15·32 16·47	5350 6640	6	12.40	<b>5</b> 650	10 14	13:44 14:02	$\begin{array}{c} 1070 \\ 1240 \end{array}$	Tal 1	V _ /3371 **	AT'I
18	16.60	8090	8	12.53	<b>571</b> 0	19	14.02	1270	<b>наке</b>	No (White	e mue)
25 90	17.26	<b>7</b> 790	$oxed{10}$	$\begin{array}{c c} 13.28 \\ 13.12 \end{array}$	6960 6430	22	14.32	1450	7.7	13:92	336
$\frac{29}{31}$	17:38 17:36	8370 8860	14	13.30	6680	25 29	14·25 14·03	1390 1 <b>2</b> 80	18 27	13:96 14:00	$\frac{344}{332}$
	onthly Mean		16	13.47	7210	1		1	*	•	
Cormal Me	an 1912-1933	5970	$\begin{array}{c c} 18 \\ 20 \end{array}$	$\begin{array}{c c} 13.02 \\ 13.54 \end{array}$	6260 7160	Approx Mo	-		1	onthly Mean	
		50.0		*O 07	1100	NormalMea	m 1740•1933	955	Normal Mea	n 1923 - 1933	312
		•			. ,	4.7		i	1		

# Discharges of the Nile during August, 1934 (continued)

Day of Month	Gange Reading m.	Disch.	Day of Month	Cauge Reading m.	Disch. m³, p s.	Day of Month	Gauge Reading m.	Disch, m³. p.s.
(£	Factory ( 14:00   14:03   11:08		(Wes	g (Bahr e dern Char 29·11   onthly Mear	mel) 216	1 Approx. Mo	kka (Bahr 13:44   onthly Mean	el Jebel) 925 1070 1140
Approx. Mo Normal Mea	nthly Mean	35		in 1931 - 1933		Mongal	la (Bahr el	l Jebel)
(Lak 7 18 27	e No Gau 13:92 13:96 14:00	ge) 307 307 306	(East	<b>a (Babr e</b> l ern Chan 428•86	nel) 685	$\left \begin{array}{c} 1\\ 6\\ 11\\ 16\\ 21\\ 26 \end{array}\right $	11.96 12.32 12.24 12.56 12.80 12.56	908 1100 1060 1200 1330 1190
Approx. Mo Normal Mea	-	307 291	I control of	nthly Mean n 1931-1933		Approx. Mo Normal Mea	nthly Mean n 1912-1933	1160 1030

### Occasional Discharges

Observed by the Irrigation Department.

and the second s			GA	CGE.	Disch.
DATE.	River.	Site.	Reading.	Site.	m.3. p.s.
- 1			М.		
		River Sobât and Tributaries			
5-8-1934	Sobât	D.S. Khor Nyanding Junction	11:59	Nyanding Mouth	605
5=8=193 <b>4</b>	,,,	,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,	12:16	**	630
5-8-1934	77	, ,,	12:48	,,	685
5-8-1934	Khor Nyanding	Mouth	11.89	••	- 4
5-8-1934	,, ,,		12.16	.,	— 2
5-8-1934	,, ,,		12:48	<b>)</b>	7
4-8-1934	" Twalor	,	9:64	Nasser	6
3-8-1934	" Wakau	"	9:57	::	<del>- 3</del> 1
3-8-1934	" "	.,	9:83	"	<b>—</b> 31
0-8-1934	,, ,,		10.10	,	<del></del> 23
1-8-1934	", Geni	.,	15:45	Akobo	<b>—</b> 7
1-8-1934	,, ,,	.,	16:20	••	10
1-8-1934	" "	.,	17:06	٠,	<del></del> 7
1-8-1934	Akobo	"	15.45	**	- 9
1-8-1934	;;	.,	16:20	••	<del> 22</del>
1-8-1934	,,		17:06	,,	- 26
0 8-1934	Agwei	.,	16.10	٠,	14
0-8-1934	-,	.,	16.98		34
1-8-1934	•,	.,	17:41	**	<del>- 4</del> 1
		,		**	

P. Phillips,

Director, Hydrological Service.

## Ministry of Public Works, Egypt — Physical Department

# REPORT ON THE WEATHER AND STATE OF THE RIVER FOR OCTOBER, 1934

#### The Weather

The chief features of the weather during the month were:-

- (1) The prolonged period of warm weather from the 9th to the 24th.
- (2) The severe thunderstorm which occurred in Upper Egypt during the last week.

During the first week, the weather was pleasant, owing to a high pressure to the west

of Egypt, causing cool northerly winds.

On the 10th a secondary depression appeared off Benghazi causing hot and dry southerly winds in Northern Egypt. The maximum temperature registered at Alexandria on the 10th and 11th was 34° C. being 6° C. above normal. In the succeeding period several shallow depressions affected Egypt and thus the warm weather was prolonged until the 24th.

On the 15th a depression arrived north of Egypt, winds went round to the south, and the weather became very hot and oppressive; the thermometer rose in Cairo on that day to 37° C. (99° F.) i.e. 8° C. above normal. The next day the depression passed and the wind veered to north-east; the temperature fell somewhat, but was still much above normal due to the approach of another deep depression from the Central Mediterranean. This depression slowly traversed southern Europe reaching Asia Minor a few days later. During this period the weather in Egypt was warm.

On the 22nd a secondary depression appeared in the desert near Siwa causing easterly winds and high temperatures for two days. The maximum temperature at Giza on the 23rd surpassed the normal by 6°C., but when this depression reached Palestine on the 25th, the temperature in Egypt fell appreciably and heavy rain fell on the coast on the 27th. The amount collected at Matruh was 12 millimetres and at Salum 9 millimetres.

On the 28th a depression developed over the northern Red Sea. Severe thunderstorms occurred in Upper Egypt and the Sinai Peninsula and heavy rain fell near Aswân, which caused floods and much damage to houses and communications. The pressure then rose over Western Egypt and settled conditions prevailed until the end of the month.

For the month as a whole, the pressure was above normal in Egypt and the Red Seand below normal in the Sudan, while the temperature was above normal everywhere. The air at Alexandria was much damper than usual, the humidity being above normal on nearly every day and averaging 73 per cent compared with a normal of 68 per cent.

Rainfall was deficient in all districts except in Upper Egypt and the Central Sudan.

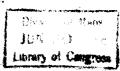
TABLE SHOWING THE DEPARTURES FROM NORMAL FOR OCTOBER 1934

	BAROM	ETRIC	TEMPERATURE.						10	
	PRESS	Pressure.		MAXIMUM.		MINIMUM.		Min./2.	RAINFALL	
DISTRICTS	1934.	Difference from Normal.	1934.	Difference from Normal.	1934.	hifference from Normal.	1934.	Bifference from Norm al.	1934.	hiffererns trom Normal
	mb.	mb.	°C.	°C.	°C.	°C.	°C.	°C.	mnı.	mm.
I. Mediterranean II. Middle Egypt III. Upper Egypt IV. North Sudan V. Red Sea * VI. Central Sudan VII. South Sudan	. 1016·8 . 1013·6 . 1009·0 . 1013·0 . 1009·4	+0.9 +0.7 0.0 -0.8 +1.2 -0.7 -0.3	29·3 30·9 36·0 40·2 34·3 37·6 33·8	+1·5 +1·3 +1·4 +0·8 +0·6 +0·5 -0·3	19.6 17.9 20.2 24.0 25.1 21.4 21.6	$ \begin{array}{c c} -0.1 \\ +1.1 \\ +0.7 \\ +0.5 \\ +0.5 \\ +0.6 \end{array} $	24·4 24·4 28·1 32·1 29·7 29·5 27·7	+0.7 +1.2 +1.0 +0.6 +0.6 +0.5 +0.2	4 0 0 0 0 20 74	$\begin{vmatrix} -3 \\ -1 \\ 0 \\ -4 \\ -14 \\ +5 \\ -25 \end{vmatrix}$

<sup>\*</sup>Port Sudan only.

L. J. SUTTON

Director, Meteorological Service.



#### State of the River

Lake Albert at Butiaba fell 3 centimetres during the month. Its level on November 1, 1934, was 4 centimetres above normal but 70 centimetres below that of the corresponding day of last year.

The Bahr el Jebel at Juba fell slightly throughout the month. The levels were below

both the normal and last year's.

The River Sobat at Nasser rose faster than normally, the levels being continuously above both the normal and those of last year.

The White Nile at Malakal rose at normal rate. The levels were above normal but

below last year's throughout the month.

The Blue Nile at Roseires rose 32 centimetres on the 2nd then fell rapidly until the 11th, rose again slightly on the 12th and 13th and fell at normal rate thereafter. The levels were above normal throughout the month but below last year's for the second fortnight. At Khartoum the Blue Nile was almost steady for the first six days and then fell rather faster than normally. The levels were below those of last year for the last ten days but above normal throughout the month.

The River Atbara at Khashm el Girba fluctuated above normal until the 13th when there was a sharp rise of 61 centimetres. After this date the level fell rapidly and was

a few centimetres below normal at the end of the month.

The Main Nile at Wadi Halfa fell at about normal rate. The levels though above normal throughout were a few centimetres below last year's at the end of the month.

The differences of the mean levels in October 1934 from those of October 1933 and from the normal 1906–1930 were:—

OF A WION	MEAN DIFFEREN	MEAN DIFFERENCES OF LEVELS					
STATION	Oct. 1934 minus Oct. 1933	Oct. 1934 minus Norma					
	Metres	Metres					
Juba Nasser Malakal Roseires Khartoum Khashm el Girba Wadi Halfa	- 0.62 + 0.41 - 0.29 - 0.05 0.00 - 0.09 + 0.27	- 0.37 + 0.27 + 0.25 + 0.55 + 0.21 + 0.07 + 0.52					

<sup>†</sup> Nasser normal is for 1922-1930 only.

P. Phillips

Director Hydrological Service

By Transfer 5, 8, Westher Bureau

# Discharges of the Nile during September, 1934

				1					1.		
Dav	Gauge	Disch.	Day	Gauge	Disch.	Day	Gauge	Disch.	Day	Gauge	n: i
of	Reading		of	Reading		of	Reading		of	Reading	Disch.
puth	m.	m³. p.s.	Month		m³. p.s.	Month		m³. p.s.	Month	1 1	m³. p.s.
	1111.			m.			in.			m	
	1			ł			1			1 1	
				•			'	<u>.</u>	į Į		
:	D C Do	mma «a \	Wassa	nah /Mais	NII.	·	, /Dl	NT:1.	M-1-1-	A1 /3371.5c.	3.T*1 \
Isna	(D.S. Ba	rrage)	nassa	nab (Mair	i Mile)	Seni	nar (Blue	Nue)	Malak	<b>âl</b> (White	Nile)
(	Main Nile	)	2	17:26	8430	2	12.46	6520	5	12.22	1190
			4	17:05	8990	$\frac{7}{4}$	11.64	5650	10	$12.\overline{25}$	1180
4	80.30	11300	6	16.91	7790	6	11.20	5210	16	12.29	1180
- 11	80.18	9770	10	16.55	7610	8	11.03	5050	20	$\frac{12.23}{12.34}$	
18	79.53	8560	12	16:36	<b>7</b> 530	10	10.59	4440	$\frac{20}{25}$	12.36	1260
25	79:09	7780	14	16.26	7220	12	10.46	4480	30		1220
-av Me	onthly Mean	9170	16	16.10	7060	14	10.91	4650	30	12:39	1240
HUX. MI	ontiny mean	0110	18	15:99	6900		10.42	4330	Approx. M	onthly Mean	<b>12</b> 20
			20	15.89	6540	16					
	_		25	15:96	6920	18	11.10	5460	Mormar Me	an 1912-1933	1160
	Aswân				1	20	10.79	4890			
	1.1 (0)			onthly Mean	- 1	22	10.76	5000			
Meast	ired by Sl	luices)	Normal Me	an 1912-1933	6540	25	10.74	4820	Hillet D	oleib (Riv	er Sobât)
(Aswa	in D.S. Ga	uge.)				27	10.52	4590			,
(21. 110			<b>7</b> 73	.:04 (35.:.	. 35'1.3	29	-10.44	4440	4	13.63	692
1	93.19	10800	Tamai	n <b>iât</b> (Mair	i mile)	Approv M	onthly Mear	ı 5000	9	13.67	714
. 2	93.19	10800	2	16:36	9010	1	-		14	13.71	703
- 3	93.17	10700	4	$16 \cdot 29$	8580	Normal Me	an 1912-193	<b>3 4</b> 990	19	13.77	695
.1	93.24	10800	6	16.07	7950				24	13.80	718
5	93*20	10700	8	15.88	7680				29	13.81	752
$\ddot{6}$	93.23	10700	10	15.73	7190	Gezir	a Main	Canal		,	
7	93.22	10500	$\tilde{12}$	15.60	7080		(Kilo 1:3)	)	Approx. M	onthly Mean	710
$\cdot$ $\dot{s}$	93.16	10300	14	15.42	6820	1			Normal Me	an 1912 - 1933	695
9	93.16	10200	16	15.35	6560	6	15.28	37			
10	93.08	10000	18	15 29	6460	6	15.28	37			
11	92.96	9740	20	15.38	6620	17	16.08	74	Diver	Sabat (A.	TT 15
12	92.87	9550	23	15.33	6620	17	16:08	74	: (	Sobat (A	•
13	92.83	9480	$\frac{27}{27}$	15.34	6550				(N:	asser Gau	ge)
14	92.76	9370			İ	Approx. M	onthly Mear	61			
15	92.62	9200		onthly Mean		Normal Me	ean 1925-19	<b>33</b> 43	3	10.40	737
16	92.56	9020	Normal Me	an 1912-1933	6700	:			13	10.21	757
17	92.40	8720							23	10.59	764
18	92.31	8480	721		37'1 3	Wad el	Aies (Bh	ue Nile)	Annear M	onthly Mean	556
19	92.24	8380	Kharte	oum (Blu	e Nile)		•	,			
20	92.20	8310	1	16.49	8520	1	13.64	6670	NormalMea	ın 1929-1933	694
$\frac{1}{21}$	92.12	8190	3	16.21	7780	3	13.08	5620			
22	92.04	8000	5	16:33	6580	.5	12.85	5380			
$\overline{23}$	91.97	7870	7	16.08	6090	7	12.52	4950	Gambe	ila (River	Rarol
24	91.94	7880	$\parallel \parallel \parallel \parallel \parallel$	15.92	5530	9	12.39	46.0		•	•
25	91.86	7800	11	15.78	5420	11	12.09	4360	1	13.99	1280
$\frac{1}{26}$	91.80	7720	13	15.57	5000	13	12.32	4450	5	13.86	1230
27	91.72	7600	1 $15$	15.48	4960	15	12.23	4450	8	14:00	1270
28	91.72	7 <b>6</b> 00	17	15.43	4940	17	12.84	5160	11	14.13	1320
			19	15.20	5380	19	12:59	4800	14	14.17	1340
$\frac{29}{30}$	91·74 91·79	7580	22	15.48	5270	21	12.49	4780			
00	1 27 (2)	7620	$\frac{25}{26}$	15.52	5500	23	13.07	5600	1		
pprox. M	onthly Mean	9120	1 1		i	25	12.40	4610	River	Gila (At	Month
	an 1912-1933		1	onthly Mean		27	12.36	4590	TILACI	A114 (31)	THOUGH)
colar MC	un 1712-1700	1020	Normal Me	an 1912-193	<b>3</b> 5530	29	12.23	3890	1	Tila Gauge	·)
\$ 1					ļ	1.		*	1		•
			River 1	Rahad (E	dae Mass	Approx. M	onthly Mean	1 4900	$\frac{1}{2}$	10.57	
River	Atbara (1	Kilo. 3)	Ittiver	ranan (E	and Mile)	Normal M	ean 1912-19.	<b>33</b> 4860	12	10.60	<del>- 48</del>
	. 17.00	9100	(Abi	ı Haraz Gau	ge)	i			22	10.64	49
. L	15.23	3120	6	9.79	167					47.1 24	. 65
$\frac{3}{2}$	14.96	2670		9.62	167 167	Mogre	n (White	Nile)		onthly Mean	
$\frac{5}{2}$	14.63	1630	$\parallel \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot$	9.50	$\frac{167}{165}$		•	•	Normal Mea	an 1929-1933	38
7	14.52	1560	9	9.49	160	5	16.33	1540			
9	14:36	1390	10	9.44	168	7	16.15	1620		_	
11	14.06	1130			·	9	16.00	1780	R	iver Pib	or
13	13.94	1260	l 1	onthly Mear	l l	11	15.87	1720	1		
15	13.74	1090	Normal Me	an 1912 - 1933	160	13	15.78	1910		Gila Jun	,
17	13.73	999			ļ	15	15.57	1460	11 (6	Gila Gauge	·)
19	13.51	560	D:	\:/T	)] %T++	17	15.45	1400		Ü	•
21	13.41	801	! !	Dinder (E	/	19	15.55	1200	2	10.57	276
22	13.40	762	Hi.	let Idris Ga	uge)	22	15.23	1160	12	10.60	291
26	13.54	985		13.08	678	26	15.53	1140	22	10.64	295
pprox M	onthly Mean	1270	1 1				•	1040	11.		
ſ			1 1	onthly Mean		1	onthly Mear			onthly Mean	
ormai Me	an 1912-1933	1380	Normal Me	an 1912-1933	403	Normal Me	ean 1912-193	33 1140	Normal Mer	an 1929-193 <mark>3</mark>	109
!					i	İ					
		,	, ,		,	•			1.1		

# Discharges of the Nile during September, 1934 (continued)

Day Gauge Reading Month m. Disch,	Day Gauge Reading Month m.	Disch. m³, p.s.	Day of Month	Gauge Reading m.	Disch, m <sup>3</sup> . p.s.	Day of Month	Gauge Reading m.	Disch, m³, p.s		
Akobo     (River Pibor)       5     17.44     282       10     17.45     281       15     17.36     279       20     17.24     244       25     17.10     227       30     16.98     231	Abu Tong (Whi (Tonga Gaug  8   12.90  18   12.90  28   13.02  Approx. Monthly Mean	Bahr el Ghazal (At Mouth) (Suddite Factory Gauge)  7   14.10   36 17   14.12   39 27   14.12   39			Terrakekka (Bahr el Jeb 1   14.16   1220 Approx. Monthly Mean 1020 Normal Mean 1931-1933 1200					
Approx. Monthly Mean         261           Normal Mean 1929-1933         78	Normal Mean 1923-1933		1.1.	onthly Mean in 1923-1933		Mongalla (Bahr el J				
Bahr el Zerâf (Kilo. 3       (Gauge at Mouth)       8     12.80     188       18     12.87     201       28     12.92     202	Lake No (Whit  7   14.02 17   14.05 27   14.03	e Nile)  - 331 - 335 - 340	1 4	Jebel (1 ke No Gau 14:02 14:05 14:03	- 1	$egin{array}{c} 1 \\ 6 \\ 11 \\ 16 \\ 21 \\ 26 \\ \end{array}$	12.70 12.50 12.06 11.86 11.78 11.71	$\begin{array}{c} 1270 \\ 1180 \\ 948 \\ 850 \\ 839 \\ 796 \end{array}$		
Approx. Monthly Mean 196	Approx. Monthly Mean	1 335	Approx. Mo	onthly Mear	<b>1 3</b> 00	Approx. M	onthly Mean	946		
Normal Mean 1912-1933 162	Normal Mean 1923 - 1933	312	Normal Mer	an 1923 - 1933	3 278	Normal Me	an 1912-1933	1070		

### Occasional Discharges

### Observed by the Irrigation Department.

	River	Site	GAUGH	Disch.
DATE	AIVER	ыть	Reading Site	m.3, p.s.
			м.	
		River Sobât and Tributaries		and the state of t
5-9-1934	Sobât	D.S. Khor Nyanding Junction	12.69 Nyanding Mouth	727
15-9 <b>-1934</b>		•	12.84 ,,	735
	,	" " " " " " " " " " " " " " " " " " " "	19.00	732
25-9-1934	"	,, ,, ,, ,, ,,	"	
5-9-1934	Khor Nyanding	Mouth	12:69 ,,	ថ
15-9-1934	,, ,,	"	12.84 ,,	5
25-9-1934	" "	,,	12.96 ,,	8
4-9-1934	" Twalor	"	10.42 Nasser	11
14-9-1934	,, ,,	"	10.51 ,,	23
24-9-1934	79 99	, ,,	10.60 ,,	33
3-9-1934	" Wakau	,,	10.42	14
13-9-1934	" "	"	10.51 ,,	25
23-9-1934	,, ,,	,,	10.60 ,,	30
1-9-1934	" Geni	"	17:42 Akobo	- 5
11-9-1934	>> >>	"	17:44 ,,	_ 7
21-9-1934	" "	"	17.22 ,,	- 3
1-9-1934	Akobo	"	17:42 ,,	- 33
11-9-1934	**	"	17:44 ,,	<b>— 3</b> 3
21-9-1934	,,	"	17.22 ,,	_ 28
10-9-1934	${f Agwei}$	"	17:52 ,,	— 42
20-9-1934	17	"	17.24 ,,	<b>—</b> 28
30 <b>-9-1934</b>	,,	"	16.99 "	14
11 - San and a s				

P. Phillips,

Director, Hydrological Service.

Govt. Press 9951-1934-450 ex.

## Ministry of Public Works, Egypt — Physical Department

## REPORT ON THE WEATHER AND STATE OF THE RIVER FOR NOVEMBER, 1934

#### The Weather

As in the preceding month, the weather was much warmer than usual for the time of year.

A depression situated over the northern part of the Red Sea deepened on the 4th and the weather in Upper Egypt became unsettled to a remarkable degree. In the next few days very heavy rainstorms, accompanied in some cases by thunder and lightning, were experienced throughout Upper Egypt, as far south as Aswân, and from the oases of Baharia and Kharga in the west to the Red Sea in the east. In the Delta only very light showers occurred. The rainfall on the 6th was particularly heavy and widespread, and considerable damage to property resulted on account of the floods. At Qosseir on the Red Sea coast the rainfall on that day amounted to 34 millimetres, while at Assiut 20 millimetres were registered. On the 8th the depression moved to northern Arabia and the weather in Upper Egypt then became settled.

In the course of the next few days a shallow depression travelled along the eastern Mediterranean and light showers occurred near the coast. Subsequently with high pressure to the north of Egypt, fresh easterly winds prevailed and the weather became much warmer, these conditions persisting with little modification for over a week. Morning mists occurred on the 19th, 20th and 22nd. On the following day a small depression was approaching Cyprus from the west, causing southerly winds in Egypt, its passage being accompanied by light rain near the coast. North-easterly winds were then again established, except in the west of Egypt where south-easterly winds were blowing into a small depression situated near Benghasi, and rainy weather prevailed in the coastal strip there for several days, though the rest of Egypt remained unaffected. In the evening of the 27th torrential rain accompanied a gale and thunderstorm at Salum, and within an hour and a quarter, forty millimetres had falled. The torrents caused much damage and the loss of a life. During the storm the wind reached a velocity of 85 kilometres an hour from the north-northwest. The storm continued on the following day, a further 22 millimetres being recorded at Salum, while 11 millimetres were registered at Mersa Matruh. At Sidi Barrani the amount reached 23 millimetres.

For the month as a whole the barometric pressure was below normal except in Lower Egypt, while throughout Egypt and the Sudan the temperature was above normal. In Cairo the day temperature was continuously above normal, especially in the latter half of the month, while the night temperature fell below normal on only four occasions.

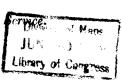
Rainfall in Lower Egypt was below normal, but that in Upper Egypt was phenomenal for that region. Rain fell at Port Sudan on thirteen days, that on the 16th amounting to 41 millimetres, while the total for the month was double the normal amount.

Table showing the Departures from Normal for November 1934

	BAROM	ETRIC			ТЕМРЕТ	RATURE.		· · · · · · · · · · · · · · · · · · ·		
**************************************	Pressure.		MAXIMUM.		MINIMUM.		MAX.+MIN./2.		RAINFALL	
DISTRICTS	1934.	Difference from Normal.	1934.	bifference from Normal.	1934.	Difference from Normal.	1934.	Difference from Normal.	1934.	hiffererne from Normal
	mb.	mb.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm,
I. Mediterranean II. Middle Egypt III. Upper Egypt IV. North Sudan V. Red Sea * VI. Central Sudan VII. South Sudan	1018·1 1015·7 1011·2 1014·0 1009·9	+1.0 +0.4 -0.6 -0.6 +0.5 -1.1 -0.5	26:2 27:4 31:0 35:8 31:0 36:9 35:7	+1.8 +1.9 +1.6 -0.2 0.0 +0.6 +0.3	17.9 14.5 15.7 20.8 23.5 18.9 19.6	+1·7 +1·0 +1·5 +1·0 -0·1 +0·9 +0·2	22:0 21:0 23:4 28:3 27:2 27:9 27:6	+1.8 +1.4 +1.6 +0.4 0.0 +0.8 +0.2	5 0 14 1 89 1 7	$ \begin{vmatrix} -19 \\ -6 \\ +12 \\ +1 \\ +44 \\ 0 \\ -11 \end{vmatrix} $

<sup>\*</sup>Port Sudan only.

L. J. SUTTON
Director, Meteorological



#### State of the River

Lake Albert at Butiaba rose 4 centimetres during the month. Its level on December 1, 1934, was 1 centimetre above normal but 59 centimetres below that of the corresponding day of last year.

With the exception of a small rise on the 3rd the Bahr el Jebel at Juba was practically steady throughout the month, the levels being below both the normal and those of last year.

The River Sobat at Nasser fell slowly during the month. The levels were throughout above both the normal and last year's.

The White Nile at Malakal was almost steady, the levels being above normal but below last year's.

At Roseires the Blue Nile fell at about normal rate for the first half of the month, and more slowly thereafter. The levels were above normal but a few centimetres below last year's. At Khartoum the Blue Nile was practically normal, the levels being below last year's throughout.

The River Atbara at Khashm el Girba fell at about normal rate, the levels which were a few centimetres below normal being considerably below those of last year.

The Main Nile at Wadi-Halfa fell at about normal rate, the levels being above normal but below last year's throughout the month.

The differences of the mean levels in November 1934 from those of November 1933 and from the normal 1906–1930 were:—

210 A 101 (227	MEAN DIFFEREN	MEAN DIFFERENCES OF LEVELS					
STATION	Nov. 1934 minus Nov. 1933	Nov. 1934 minus Norma					
	Metres	Metres					
Juba	- 0.36	- 0.31					
Nasser Malakal	+0.23 $-0.25$	+ 0.43 † + 0.29					
Roseires	- 0.08	+ 0.48					
Shartoum Shashm el Girba	-0.19 $-0.25$	$+ 0.05 \\ - 0.09$					
Wadi Half <b>a</b>	- 0.33	+ 0.53					

<sup>†</sup> Nasser normal is for 1922-1930 only.

### Discharges of the Nile during October, 1934

Day of Month	Gauge Reading	Disch. m³. p.s.	Day of Month	Gauge Reading	Disch. m³. p.s.	Day of Month	Gauge Reading	Disch. m³. p.s.	Day of Month	Gauge Reading	Disch. m³. p.s.
							m.			m.	
Esna	' (D.S. Ba	rrage)	Hassa	່ nab (Mair	ı Nile)	Wad el	Aies (Bl	ue Nile)	River S	' Sobat (A	t Head)
()	Main Nile	•)	1	15.69	6500	1	12:43	4550	(Z	asser Gau	ge)
2	78.96	7430	6	15:44	6240	3	12.65	5010	3	10.66	781
$\frac{9}{16}$	78.68 78.18	$\begin{array}{c} 6840 \\ 6110 \end{array}$	$\begin{vmatrix} & 10 \\ 15 \end{vmatrix}$	15°22 14°93	5750 5010	5 7	11.74 11.20	$\frac{4070}{3390}$	13	10.75	793
23	77.34	5110	19	14.48	4630	9	10.89	3190	23	10.80	793
30	76.49	3960	24	14.08	4090	11	10.51	2890		onthly Mear	
pprox. Me	onthly Mean	ı 5910	31	13.56	3200	$\begin{array}{c c} & 13 \\ & 15 \end{array}$	10:42 10:40	2870 2870	Normal Me.	an 1929 - 1933	739
	Aswân		1 1	onthly Mean an 1912-1933		17 19	10.27 9.88	$\frac{2790}{2510}$	Gambe	ila (Rive	r Baro)
(Magaza	ired by S	Inions)				21	9.56	2190	Sept. 18	13.70	1140
•	in D.S. G:		Tamai	niât (Mair	Nile)	2.3   <b>2</b> 5	9°34 9°16	$\frac{1980}{1790}$	21	14.00	$\frac{1140}{1260}$
` _				15.07	5640	27	9.00	-1690	25	14.03	1220
$\frac{1}{2}$	91.81 91.80	$\frac{7480}{7470}$	$\begin{vmatrix} 1 & \frac{2}{7} \end{vmatrix}$	$\frac{15.07}{14.98}$	5490	29	8.52	1570	28	13.53	1040
$\tilde{\bar{3}}$	91.76	7400	11	14.52	5180	Approx. Mo	onthly Mear	ı 2800		onthly Mean	
4	91.64	7120	16	14*00 13*65	$\frac{4450}{4080}$	Normal Me	ean 1912-193	33 2420	NormalMea	an 1928-19 <mark>3</mark> 3	-1150
$\frac{5}{6}$	91.51 91.48	$6940 \\ 6890$	21 28	13.10	3449		• (5)1	n *****	Oct. 2	13:52	1060
7	91.50	6920		onthly Mean			ires (Blue	· Nile)	_		1.70.7
8	91.45	6820	1 1	an1912-1933		15	16:78	2780	River	Gila (At	Month
$\frac{9}{10}$	91.40 91.32	6730 6590				17 19	16:48 16:45	2480 2260	!	Gila Gauge	•
11	91.25	6490			m=11 \	21	15.92	2000	(		,
12	91.12	6180	Kharte	oum (Blue	Nile)	23	15:73	1870	2	10.64	
$\frac{13}{14}$	91.00	6120 5830	1	15.20	4920	25 27	15157 - 15143 -	1740  imes 1630  imes	12	10.62 10.52	
$\frac{14}{15}$	90.92	5900	6	15:20	4890	29	15:34	1570	Î	,	
16	90.80	5760	$\begin{vmatrix} 10 \\ 15 \end{vmatrix}$	$\frac{14.71}{14.23}$	37 <b>4</b> 0 <b>3</b> 010	31	15 <b>°2</b> 5	1480		onthly Mean	
$\begin{array}{c} 17 \\ 18 \end{array}$	90°72 90°68	5620 5610	20	13:99	2750	Approx Mo	onthly Mean		Normal Mes	ın 1929 - 1933	29
19	90.64	5580	27	, 13:37	1910	NormalMed	an 1912 - 1933	<b>2</b> 420	D.	D'1	
20	90.28	5470	Approx. M	onthly Mean	3220					iver Pibe	
21 22	90.42	5220 5020	Normal Me	an 1912-1933	2920	Mogre	n (White	Nile)		Gila Jun	
$\frac{23}{23}$	90.12	4800				1	15:27	1400	((	Jila Gauge	:)
24	90.04	4760	Senr	nar (Blue I	Nilo)	10	15°22 14°83	$\frac{1350}{1830}$	2	10.64	288
25 26	89·90	$\begin{array}{c} 4710 \\ 4560 \end{array}$		,	,	15	11.33	1580	12 22	10°62 10°52	280
27	89.75	4420	$\begin{vmatrix} 1 & 1 \\ 3 & 3 \end{vmatrix}$	10.20 10.20	4630	20	14.06	1370		10 .52	
28	89.60	4300		9.90	4920 3830	27	13.52	1420	Approx. Me	onthly Mean	267
$\frac{29}{30}$	89:45	$\frac{4120}{3960}$	12	8.77	2750		onthly Mean		Normal Mea	m 1929-1933	129
31	89.14	3780	14	8.77 8.74	$\frac{2550}{2610}$	Normal Me	an 1912-193	3 1390 ·	Akob	(River	Pibor)
Approx. M	onthly Mear	i 5760	18	8.52	2360	Molak	81 (White	NT:LA	$\bar{\mathfrak{z}}$	16.86	216
	an 1912-1933		20	8:20	2040		<b>âl</b> (White	•	10	16.71	187
			$\frac{22}{24}$	7 · 99 7 · 80	$\frac{1860}{1710}$	5 	12·44 12·49	$\frac{1280}{1280}$			
Hal	fa (Main	${f Nile})$	27	7:45	1380	15	12:51	1290	Bahr e	l Zerâf (	Kilo. 3)
30	5.46	4250	29	7:30	1300	20	12.51	1310	; (Gai	ige at $ m Me$	outh)
31	<b>5</b> *36	4150	31	7.20	1260	25 30	12:52 12:52	1290 1300	8	13.00	206
Approx. M	onthly Mean	ı —		onthly Mean			onthly Mean		18	13.04	
	an 1912 - 1933		Normal Me	an 1912-1933	<b>3 2</b> 520	1 /	an 1912-1933		28	13:05	212
							WH 1712 1700	1 = 10	1	onthly Mean	
River	Atbara (	Kilo. 3)	Gezir	a Main (	Canal	Hille t D	oleib (Riv	er Sobât)	Normai Me	an 1912-1933	164
2	13.18	673	I i	(Kilo 1:3)		4	13:87	761	. Δ h	ona (1171 )	. 370
7 11	12.98	526 402	$  $ $  $ $  $ $  $ $  $ $  $ $ $	16.11		9	13:02	763	,	ong (Whi	
16	12.61 12.18	$\frac{402}{476}$	2	16.11	73 78	14 19	13.94	772	:	onga Gang Latana	
20	12.13	341	16	16.42	92	24	13:96 13:97	785 762	18	13·12 13·17	347 340
25	11.67	204	16	16.42	93	29	13.99	790	28	13.15	324
	onthly Mear		Approx. M	onthly Mean	83	Approx. M	onthly Mean		Approx. Mo	onthly Mean	
Normal Me	an 1912-1933	280	Normal Me	an 1925-193	<b>3</b> 75		m1912-1933	i	1	m 1923-1933	
					1						****

# Discharges of the Nile during October, 1934 (continued)

		and the part of the second second second second second second second second second second second second second									
Day of Month	Gauge Reading m.	Disch, m³, p.s.	Day of Month	Gauge Reading m.	Disch. m³, p.s.	Day of Month	Gauge Reading m.	Disch. m³. p.s.	Day of Month	Gauge Reading m.	Disch, m³, p.s.
1	1										
Lake I	No (Whit	e Nile) 333	1	Jebel (	•	Gemeiz	a (Bahr e	l Jebel)	Mongal	la (Bahr e	el Jebel)
17 27	14·12 14·10	346 338	7	ce No Ga:  14*10	uge)   291	(Eas	tern Chai	mel)	$\frac{1}{6}$	11.62 11.63	752 792
Approx. Monthly Mean 339			17 27				428.62	624	11 16	11·54 11·56	<b>74</b> 0 <b>75</b> 3
NormalMea	NormalMean 1923-1933 312		Approx. Monthly Mean 290			Approx. Mo	onthly Mean	602	$\begin{array}{c c} 21 \\ 26 \end{array}$	11.50 11.48	752 7 <b>2</b> 5
	r el Gha		Normal Mea	ın 1923-193	3 272	Normal Mean 1931-1933 815 Approx. Monthly Mea					
	At Mouth) • Factory		Gigging	g (Bahr e	l Jebel)					ın 1912-1933	
7 1	14.20	59	(Wes	tern Chai	mel)	Terrake	kk <b>a</b> (Bahi	r el Jebel)	Nimul	<b>é</b> (Bahr el 10•25	<b>Jeb</b> el) 758
$\begin{bmatrix} 17 \\ 27 \end{bmatrix}$	$\frac{14 \cdot 20}{14 \cdot 17}$	96		28:80		1	13.08	794	$\begin{vmatrix} 1\\1\\2 \end{vmatrix}$	10·25 10·24	756 755
Approx. Mo	•	-	Approx. Mo	nthly Mean	175	Approx. Mo	nthly Mean	767	$\begin{bmatrix} \frac{2}{2} \\ 3 \end{bmatrix}$	10·24 10·23	77:3
Normal Mea	n 1923-1933	13 44	Normal Mea	in 1931-1933	<b>3</b> 00	Normal Mea	n 1931 - 1933	1140	3	10.23	739 751
=3						1			1		

#### Occasional Discharges

#### Observed by the Irrigation Department.

		C.	GAUGE		Disch.	
J)ate	River	Site	Reading	Site	m.3. p.s.	
			М.	1		
		River Sobât and Tributaries				
[0-1934	Khor Fullus	Mouth	13:97	H. Doleib	8	
(t)-193 <b>4</b>	Sobât	D.S. Khor Nyanding Junction	13.04	Nyanding Mouth	733	
;(t)= <b>1</b> 93 <b>4</b>	,,,	,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,	13:13	,,	794	
-(0-1934	,,,	29 29 29 29 29	13:19	; ;	776	
10-1934	Khor Nyanding	Mouth	13.01	,,	7	
(+)-1934	. ,, ,,	,,	13.13	•••	-16	
- 9-1934	<b>&gt;&gt;</b>	,,	13.19	>7	<b>-34</b>	
- (0. 1934	" Twalor	,,	10.67	Nasser	43	
10-1934	" "	,,	16:76	פל	142	
193 <b>4</b>	,, ,,	,,	10.80	***	139	
-14-1934	" Wakau	,,	10.67	,,	34	
I-10 <b>-1934</b>	,, ,,	,,	10.75	. ,,	42	
}-193 <b>4</b>	, ,, ,,	,,	10*.50	, ,,	47	
1-1934	"Geni	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	16.96	Akobo	- 4	
- 55 <b>-1934</b>	" "	,,	16.68	77	3	
1934	22 23	,,	16:31	**	5	
L-:0 <b>-1</b> 934	Akobo	,,	16.96	,,	- 24	
10-1934	,,	"	16.68	,,	<b>— 18</b>	
. H <b>P-1934</b>	,,	,,	16:31	77	<b>—</b> 12	
)-10 <b>-1934</b>	Agwei	,,	16.71	,,	19	
)- (0) <b>-1934</b>	,,	,,	16:36	,,	42	
-10-1934	,,	,,	15.85	17	54	
	_	White Nile Tributaries		713		
- 10-1934	Tonga Cut	Tail	13.13	Tonga	54	
-10-1934	"	"	13.15	,,	48	
-10-1934	Khor Lolle	U.S. Tonga Cut	13.17	,,	50	
-10-1934	23	,, ,, ,,	13.15	**	49	

P. PHILLIPS, Director, Hydrological Service.

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#### Ministry of Public Works, Egypt — Physical Department

# REPORT ON THE WEATHER AND STATE OF THE RIVER FOR DECEMBER, 1934

#### The Weather

During the greater part of the month, weather conditions over the eastern Mediterranean were much disturbed by the passage of depressions, and in Egypt the winds were almost continuously from between south and west. Remarkably heavy rain fell on the coast during the first and last weeks, especially in the vicinity of Abukir Bay. Eastwards along the coast and inland rainfall rapidly diminished, being very small at Port Said and almost negligible in Cairo.

At the beginning of the month a depression developed over the northern Red Sea, mild northeast winds blew in Egypt, and light showers occured.

On the 4th a depression arrived north of Egypt and cool fresh westerly winds arose. The eastern Mediterranean remained under the influence of a disturbance for a week during which period the weather throughout Lower Egypt was unsettled and rain fell in many places. At Alexandria there were showers daily until the 10th, the amount reaching 51 millimetres, of which 21 millimetres fell on the 4th. On the following day 62 millimetres were recorded at Tolombat, near Abukir, 34 millimetres at Tarfaia on the west of Lake Edku and 26 at Mex. There was also rain in Upper Egypt on 7th: Baharia Oasis recorded 9 millimetres. The wind velocity reached 80 kilometres an hour at Alexandria on the 9th.

High pressure was established over Egypt on the 12th and settled conditions with mild weather prevailed for some days.

From the 17th onwards a series of depressions traversed the Mediterranean basin affecting continuously the weather conditions in Egypt and causing southerly winds to prevail during the remainder of the month, with abnormal rainfall during the last week.

On the 19th a deep depression centred over Crete, with a secondary off Alexandria, moved quickly eastwards, causing strong southerly winds throughout Egypt. Severe sandstorms occurred in the western desert and at Salum the wind velocity reached 75 kilometres an hour. Similar conditions though of less severity were maintained by a succession of depressions. With the arrival of a depression over Cyprus on the 27th a spell of rainy weather was experienced near the coast. On the 29th rain fell at Alexandria with short breaks for nearly the whole day, the amount reaching 35 millimetres; 10 millimetres were recorded at Tarfaia and 31 at Tolombat.

For the month as a whole the barometric pressure was below normal in all districts except in the southern Sudan—particularly in Lower Egypt. The temperature was almost continuously above normal in Lower Egypt, though not by large amounts, and slightly below normal in Upper Egypt and the Sudan. Rainfall was much above normal on the coast except in the eastern parts, being between three and four times the normal at Tarfaia, where it amounted to 211 millimetres, and at Tolombat, where it reached 181 millimetres. These amounts represent a series of unusually heavy storms, as there were only ten days of rain. At Alexandria rain fell on 16 days, giving a total of 103 millimetres compared with a normal of 59 millimetres. On the other hand, only 14 millimetres fell at Port Said.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR DECEMBER 1934

- The state of the	BAROM	BAROMETRIC .								
TALOURIA LOUSO	PRESS	URE.	MAXIMUM.		MINIMUM.		MAX.+MIN. 2.		RAINFALL	
DISTRICTS	1934.	Difference from Normal,	1931.	histerence from Normal.	1934.	bifference from Normal,	1934,	hifference from Normal.	1934.	Difference from Normal
	mb.	mb.	°('.	₹0.	°C.	°('.	°C.	°C.	mm,	mm.
I. Mediterranean II. Middle Egypt III. Upper Egypt IV. North Sudan V. Red Sea * VI. Central Sudan VII. South Sudan	1017·8 1014·0 1014·7 1012·7	$ \begin{array}{r rrrr} -2.4 \\ -2.1 \\ -1.1 \\ -0.1 \\ -0.3 \\ +0.6 \end{array} $	21·2 22·0 24·1 31·3 27·8 33·0 35·2	+1.0 +1.5 +0.1 -1.0 -0.6 -1.1 -0.5	12·5 9·9 9·2 15·0 22·2 14·4 17·8	+0.8 +0.9 -0.3 -0.6 +0.9 -0.5 +0.2	16:8 16:0 16:6 23:2 25:0 23:7 26:5	+0.9 +1.2 -0.1 -0.8 +0.2 -0.8 -0.2	70 10 0 0 3 2 8	+33 + 2 - 3 0 -23 + 2 + 2

\*Port Sudan only.

#### State of the River

Lake Albert at Butiaba fell 5 cms. during the month. Its level on January 1st 1935 was 5 cms. above the normal but 57 cms. below that of the corresponding day of last year.

The Bahr el Jebel at Juba was almost steady throughout the month. The levels were below normal and much lower than last year's.

The River Sobat at Nasser fell at about normal rate the levels remaining above both the normal and last year's throughout.

The White Nile at Malakal remained steady during the first fortnight and fell slowly thereafter. The levels were above normal throughout, above last year's until the 23rd and almost identical with them afterwards.

The Blue Nile at Roseires fell normally during the first fortnight. It then remained steady for a week and fell again almost normally thereafter. The levels were above normal during the whole month, identical with last year's until the 10th and above them afterwards. At Khartoum the Blue Nile fell during the first 3 days, rose slightly until the 7th due to the completion of the filling of Sennar Reservoir, and then fell slowly until the end of the month. The levels were a few centimetres above normal throughout, below last year's until the 24th and a few centimetres above them therefater.

The Main Nile at Kajnarti fell at normal rate for the first 14 days, remained steady until the 20th and then fell again at normal rate until the end of the month. The levels were above normal but below those of last year.

A remarkable feature of the month was the pause in the fall of the Blue Nile at Roseires which remained steady for a week and then fell only a little faster than normally, indicating a very unusual rainfall in Abyssinia at this time of year. Equally remarkable was the lateness of the fall of the Sobat at its mouth as compared with Nasser about 300 kilometres upstream, indicating that a large volume of water entered the river between Naser and its mouth.

The differences of the mean levels in December 1934 from those of December 1933 and from the normal 1906-30 were:—

	VTIOS		ĺ.	MEAN DIFFEREN	MEAN DIFFERENCES OF LEVELS					
81.	ATIO:	`		Dec. 1934 minus Dec. 1933	Dec. 1934 minus Norma					
				Metros	Metres					
Juba			 	- 0:32	- 0.18					
Nasser			 	+ 0.42	+ 0.98 +					
Malakal	• • •		 	0.07	+ 0.53					
loseires			 • • •	+ 0.18	+ 0.59					
Xhartoum -			 	0.08	+ 0.11					
Kajnarti			 :	— ()·27	十 ()・22					

<sup>†</sup> Nasser normal is for 1922-1930 only.

## Discharges of the Nile during November, 1934

			l n	Gauge	***	Day	Gauge	D: 1	Day	Gauge	1): 1
ay M	Gauge Reading	Disch. m³. p.s.	Day of Month	Reading	Disch. m³. p.s.	of Month	Reading	Disch. m <sup>3</sup> . p.s.	of Month	Reading	Disch. m³. p.s.
11111	m.									m.	
					ļ		1	1			
sna	(D.S. Ba	rrage)	H	alfa (cont	d.).	Sei	nnar (con	td.).	Hillet D	oleib (Riv	er Sobât)
	` Main Nile		24	3.71	2280	17	6.30	732	4	14.02	786
	75.24	2800	25	3:67	2210	19	6·21 6·14	703 551	$\begin{vmatrix} & 9 \\ 14 \end{vmatrix}$	14·02 14·04	$\begin{array}{c} 801 \\ 823 \end{array}$
$\frac{6}{13}$	74.84	2390	26 27	3.62 3.58	$\begin{bmatrix} 2310 \\ 2250 \end{bmatrix}$	21 24	5.96	540	19	14.05	891
20	74.30	2090	28	3.55	2190	28	5.88	574*	24	14.05	819
27	73.86	1560	28	3.55	2230	30	5.87	598*	29	14.05	827
o 3	onthly Meat	ı 2330	29	3:50	2190	Approx. M	onthly Mear	n 810		onthly Mean	
			1	onthly Mear		Normal Me	an 1912-193	3 887	Normal Me	an 1912 - 1933	778
	Aswân		Normal Me	an 1912 <b>- 1</b> 933	<b>3</b> 2860			-			
N	ured by S	luices)	River	Atbara (	Kilo. 3)		a Main		River	Sobat (A	t Head)
. N	ân D.S. G	auge.)	1	1 11:26			(Kilo 1*3		(N	asser Gau	ge)
1	88:99	3570	8	11.00	82	2	16:06	72	3	10.83	801
2	88*84	3380	12	10.88	72	$\frac{2}{17}$	16.06 15.84	69 63	13	10.77	711
. 1	88.70	3210 3080	$\begin{array}{c c} 17 \\ 22 \end{array}$	10.74	57 5 <b>4</b>	17	15.84		23	10.62	638
4	.88:40	2870	26	10.56	38	Anner W	onthly Mear			onthly Mean	
-:	88125	2750	Approx. M	onthly Mea	n 68	1 1 1 1	ean 1925-19		Normal Me	an 1929 - 1933	660
	88°21	2710 2720	1	an 1912-193				·/ <b>-</b>			
7	88.21	2720					• (DI	. 3*:1\	River	Gila (At	Mouth
	88:20	2720	Hassa	nab (Mai	n Nile)	Hose	ires (Blu	e viie)	i i	,	•
	88.05	2630 2540	7	13.04	2780	2	15.30	1490	(,	Gila Gaug	e)
	87.92	2420	11	12.92	2660	$\frac{4}{6}$	$15^{\circ}16$ $14^{\circ}96$	$\begin{array}{c} 1440 \\ 1330 \end{array}$	2	10.41	-15
: 1	87.80	2310	16	12.68	2390	8	11.79	1210	12 22	10.27 10.08	$-9 \\ 31$
	87.68 87.63	2200 2190	$\begin{array}{c c} 21 \\ 25 \end{array}$	12.53 12.45	2100 2000	10	14.67	1120		•	•
10	87.55	2120	30	12:32	1900	12	14°56 14°48	· 1090 1010	1	onthly Mear	
	87:52	209.)	Annrov M	lonthly Mea	'	16	14.42	996	Normal Me	an 1929 - 1933	32
1.5 201	$\frac{87.53}{87.53}$	2090		ean 1912-193		18	14:32	942			
21	87.52	2080	TOTAL M	cum ( ) 12 1 7 0		20 22	14·23 14·15	923 874	R	iver Pib	or
	87:52	2080	Tama	niât (Mai	n Nile)	21	14.11	873		Gila Jun	
1743	87:40	1990	.1	12.60	2670	26	14.04	843	11		•
	87.16	1790	$    \hat{s}  $	12.39	2410	28 30	14°00 13°96	828 813		Gila Gaug	ge)
	87:04	1700	13	12.16	2250				2	10.41	
1	86:92	1600 1550	18 22	12:01 11:89	2200 2030	1.7	louthly Mea		12 22	10°27 10°08	$\begin{vmatrix} 175 \\ 121 \end{vmatrix}$
	86.68	1440	27	11.77		Normai M	ean 1912-193	10 I(.) I i		•	
t	86*60	1390	Approx. N	lonthly Mea	in 2260	7.5	(NTT) *(	X**1 \	11.	louthly Mea	
<b>)</b> :	Monthly Mea	in 2330		lean1912-193		Wogi	ren (Whit	.е ине)	Normal M	ean 1929-193	<b>3</b> 125
b នៅធាំ	ean 1912-19.	33 2800				3	13.03				
			Khar	toum (Bl	ue Nile)	12	12182 12160		Ako	bo (River	Pibor)
~ a	lfa (Main	Nile)	3	12.86	1420	17	12:44	1240	Oct.15	16•64	187
	5.25		7	12.72	1350	21	12:32		20	16*35	154
- 1	5.08	3810	12 17	12:46 12:26		26	12.18	•	25	16:11	133
	4:98 4:89		21	12.12	805		Monthly Me.		30	15.88	
	1.71	3360	26	11.97		Normal 3	Mean 1912-1	933 1220	Apprex.	Monthly Mes	
	4.64	3270	Approx.	Monthly Me	an 1()1()				Normal M	iean 1929- <b>19</b> 3	82
in Hi	4*47		1 1 '	1ean 1912-19		Mala	kâl (Whi	te Nile)			
12	4:30	2910				5	12.54		Nov. 5	15165	
13	4 • 24	2830	Ser	nnar (Blu	e Nile)	10	12.22	1300	10	15.43	
14	4·18		3	7:10	1200	15 21	12.55 12.56		$\begin{array}{c c} & 15 \\ 20 \end{array}$	15°24 15°02	
18	3.98		$\downarrow \downarrow = 5$	7.09	1210	$\frac{21}{25}$	12.56		$\frac{1}{25}$	14.80	53
19		5 <b>2</b> 510	7	6.88		30	12.56		30	14.60	
20 21			10 12	6.54		Approx.	Monthly Me	ean 1300	Approx.	Monthly Mea	an 78
22			11 14	6.36			lean 1912-19		Normal	Mean 1929-1	933 67
:									1 [		
:											

<sup>\*</sup> Site transferred to 1 kilometre U.S. Hillet Sherif.

### Discharges of the Nile during November, 1934 (continued)

Day of Month	Gauge Reading m.	Disch, m³, p.s.	Day of Month	Gauge Reading m.	Disch. m³, p.s.	Day of Month	Gauge Reading m.	Disch, m <sup>3</sup> , p.s.	Day of Month	Gauge Reading m.	Dig mi <sup>3</sup> ,
(Gau 8 18 28 Approx. M Normal Mes	1 Zerâf ( age at Mo 13:06 13:07 13:07 00000000000000000000000000000000000	214 209 206 210 210 3 162	(Suddite 7 17 27 Approx. Me	At Mouth be Factory 14.17 14.14 14.14 conthly Mean an 1923-1933	Gauge)   32   31   25	Bor   Aug12   12   13   13   14   15   15   16   16   17   17	(Bahr e! J 11:40 11:40 11:41 11:41 11:41 11:41 11:42 11:42 11:42 11:42 11:42	ebel)  773 762 772 767 768 780 781 799 783 781 781 786	(Eas 2 Approx. M Normal Mc Terrake 1 Approx. Me	za (Bahr o tern Char   428*50   onthly Mean  an 1931*193   12*94   onthly Mean  an 1931*1933	nnel)   5   5   3   7   rel Je   7   7
NormalMe  Lake  7 17 27  Approx. M	No (Whit 14*09 14*07 14*07 onthly Mean an 1923-1933	2.06 e Nile) - 318 - 329 - 324 1 - 324	(La) 7 17 27 Approx. M	L Jebel ( ke No Gar  14:09 14:07 14:07 onthly Mean an 1923-1933	190)   291   300   304   298	(Wes	g (Bahr e stern Char 28*68 onthly Mean an 1931-1933	inel)   166 a 164	1 6 11 16 21 26 Approx. M	11:52 11:62 11:57 11:57 11:54 11:52 onthly Mear	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7

## Occasional Discharges

The second secon		- Commence - Section - Commence -		o make a state of the state of			-=:2					( )	And the second particular and the second par	1
DATE	River			;	Site							·	UGE	Discu.
									<u>.</u>			Reading	Site	m.3. p.s.
A PROPERTY OF THE PROPERTY OF												м.	: !	
													1	
		_		101		m·	T 4	• _					í	
		R	iver S	obat	and	Trı	but	arıe	S					
!=11 <b>-</b> 193 <b>4</b>	Khor Fullus	Mouth								•••		14.02	H. Doleib	5
11-11-1934	" "	,,		• • •	•••	• • •	• • •	•••	•••	•••	•••	14.04 14.05		6 7
23-11-1934 5-11-1934	" Sobat	D.S. Khor	Nyand	ing J	uneti	on			•••	•••		13.27	Nyanding Mouth	820
15-11-1934	•											13.28	.,	810
25-11-1934	"	77 77	"		"		•••		•••	• • •	• • • •	13.24	,,	797
5-11-1934 15-11-1934	Khor Nyanding	Mouth	•••	•••	•••	• • •	• • •	•••	•••	•••	•••	13.27 $13.28$	"	$-\frac{16}{16}$
25-11-1934	;; ;;	"										13:24		1()
1-11-1934	" Twalor	**	•••	• • •			•••	•••	•••	• • •	•••	10:83 10:76	Nasser	$\frac{166}{149}$
14-11-1934 24-11-1934	" "	"	•••	• • •		• • •					•••	10.60	" "	135
3-11-1934	" Wakau	**	•••	•••		•••	•••	•••	•••	•••	• • •	10:53 10:77	, ,,	$\frac{54}{51}$
13-11-1934 23-11-1934	>> >> >>	"					· · ·	•••		•••		10.62	,; .,	32
1-11-1934	" Géni	"		•••	•••		• • •		•••	•••		15.82	Akobo	6
11-11-1934 21-11-1934	,, ,,	·,		•••		• • • • • •	• • •	•••	•••	•••	•••	15:40 14:98	* **	6
1-11-1934	" Akobo	"		•••			•••	•••	•••	• • •	•••	15.82	,,	<b>—</b> 7
11-11-1934 21-11-1934	,,	"	•••	•••	•••	• • •	•••	•••	•••	•••	•••	$15.40 \\ 14.98$	",	$\frac{4}{3}$
10-11-1934	$oldsymbol{\Lambda}_{oldsymbol{g}}$ wei	"		•••		•••	•••	•••		•••	•••	15.44	;;	52
23-11-1934 39-11-1934	٠,	**	•••	• • •	•••	•••	• • •	•••	•••	• • •	•••	15:03 14:60	, ,,	$\begin{array}{c} 38 \\ 26 \end{array}$
11 111	<b>,</b>	"		•••					•				1	
			<b>****</b> */	37*1	m	• • •								
		!	Whit	e inii	e Tr	ıbut	arı	es						
6-11-1934	Tonga Cut	Mouth								•••		13:16	Tonga	40
7-11-1934	•••	,,		•••	··· •	••	•••	•••	•••	•••	•••	13:16 13:16	**	$\frac{45}{37}$
16-11-1934 25-11-1934	••	,,,				•••	• • •	•••		•••	•••	13.15	;,	28
6-11-1934	Khor"Lolle	U.S. Tonga	Cut	•••	•••	••	. • •	•••	•••	•••	•••	13.16	. •,	41 40
7-11-1934 16-11-1934	**	,, ,,	"	•••			• • •		•••	• • • •		13.16	;; ;;	39
15-11-1934	1 10	At 23 kms.	നടിനം			•••	•••	•••	•••	•••	•••	13.15	,,	$\begin{array}{c} 36 \\ 34 \end{array}$
6-11-193 <b>4</b> 6-11-193 <b>4</b>	;; ;;	35 ,	.,	nga c	•	• • •	• • •	•••	•••	• • • •	•••		_	3 <del>4</del> 36
6 - 11 - 1934	",	" <b>4</b> 0·5 "	11		,	•••	•••	•••	•••	•••	•••	-		27
6-11-1934 6-11-1934	Khor Yergol	41 ,, Mouth	"	,, ,	•••	• • •	•••	•••	•••	• • • •		14:36	Khor	$\begin{array}{c} 17 \\ 20 \end{array}$
16-11-1934	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,,		•••		•••	•••		•••	•••	•••	14.35	$\Gamma$ ergol	16
25-11-1934 7-11-1934	Maya Šinyora	,,		•••	•••	• • •	• • •		•••	•••	•••	14·34 14·09	Lake Mo	$\begin{array}{c} 12 \\ 10 \end{array}$
17-11-1934	"	,,		•••		• • •	• • •		•••	•••	•••	14.07	• ••	8
26-11-1934	,,	,,	•••	•••	•••	•••	•••	•••	•••	•••	•••	14.07	,,	7
		P.	hu al	7 2 6		1 T-	.: h.,		0.5					
		1 158	hr el	∠erai	ano	ıır	ıbu	läF]	es					
26-8 -1934	Zerâf	U.S. Tail cu	Xo. 1	•••	· · ·								Tail cut 1	35
	Jebel-Zeráf Cut No. 1	Tail		•••			•••	•••	•••	•••	•••	$28 \cdot 37 \\ 26 - 72$		84 19
<sup>9</sup> 6-8 -1634 26-8 -1934	, , , , , , , , , , , , , , , , , , ,	50"mts. D.S.	Pole 53	•••			•••	•••		•••		26-72	,,	155
											İ			

### Occasional Discharges (contd.).

DATE	River	C	G.	Disch	
DATE	MIVER	SITE	Reading	Site	m³, p.s.
			М.		
		Bahr el Jebel and Tributaries			
18- 8-1934	Jebel	Bor	11.43	Bor	795
18- 8-1934	••	At about 7 kms. D.S. Bor	11.43	,,	778
18- 8-1934	Spill out	At the offtake, kilo 611	11.43	,,	11
18- 8-1934	Jebel	U.S. Aliab Tail 1	11.43	,,	698
18- 8-1934 18- 8-1934	Aliab Tail 1	Mouth	deres constant		99
18- 8-1934	Jebel	D.S. Aliab Tail 2	*****		13 777
18- 8-1934	,,	0.5 kilo U.S.R.P. 120			731
18 - 8 - 1934	• • • • • • • • • • • • • • • • • • • •	1 kilo D.S.R.P. 119		90 . rus	739
19- 8-1934	12	About 0.5 kilo U.S.R.P. 118		•	694
19- 8-1934	Atem Head 1	Head			32
19- 8-1934 19- 8-1934	Jebel	D.S. Atem Head 1			588
19- 8-1934 19- 8-1934	• • • • • • • • • • • • • • • • • • • •	At about 0.5 kilo U.S.R.P. 116			620
19- 8-1934	• • • • • • • • • • • • • • • • • • • •	DS Atom Hoods 2a and 2h			$\begin{array}{c} 535 \\ 480 \end{array}$
20- 8-1934	Atem Heads 2c&3	Junction of both	-		184
19- 8-1934	Jebel	D.S. Atem Heads 2c & 3			$\frac{101}{343}$
20- 8-1934	. ,,	U.S. Atem Head 4a	Water desiration in the latest and t		335
20- 8-1934	**	D.S. Atem Head 4c			253
20- 8-1934	,,	R.P. 112			195
20- 8-1934 20- 8-1934	Lake Papiu	U.S. Lake Papiu			165
20- 8-1934	Jebel	Mouth			367
20- 8-1934		A+ R P 100	The same		$\begin{array}{c} 508 \\ 483 \end{array}$
21 8-1934	**	U.S.R.P. 108	-		453
21- 8-1931	,,	R.P. 107	en- comp		432
21- 8-1934	,,	2 kms. U.S.R.P. 104	Trak-q		389
22- 8-1934	,,	Kenisa Gauge	11.15	Kenisa -	323
22- 8-1934 22- 8-1934	Awai Head 1	Abukika			350
22- 8-1934	Jebel	Head	*******		51
22- 8-1934		U.S. Inlat on R.R.			$\begin{array}{c} 244 \\ 189 \end{array}$
22- 8-1934	Inlet	At Tail			69
23- 8-1931	Jebel	U.S. Awai Tails 1a & 1b			252
23- 8-1934	1	D.S. Awai Tail 1b	****		601
23- 8-1931	Awai Tail 2	Mouth	******		53
23-8-1934	Jebel	D.S. Awai Tail 2	***************************************		458
23- 8-1934 23- 8-1931	* ,,	U.S. Shambe Lagoon			456
24- 8-1934	Awai Head 2	Haad			538
24- 8-1934	Jebel	U.S.R.P. 79		******	$\begin{array}{c} 15 \\ 525 \end{array}$
$24 - 8 \cdot 1934$		U.S. Awai Head 3	****	Mark You	449
24- 8-1934	Awai Head 3	Head	11.72	AwaiTail	99
24- 8-1934	Jebel	About 100 mts. U.S. Awai Tail 3a	No. 1407 and		362
24 - 8-1951 24- 8-1934	Awai Tail 3a	At Tail	11.72	AwaiTail	165
24- 8-1934	Awai Tail 3b Jebel	Awai Tail Gauge	11.72	,,	101
25- 8-1934		19 P 79	$\frac{11.72}{-}$	:,	$\begin{array}{c} 563 \\ 510 \end{array}$
25-8-1931	,, ! ,,	U.S. Lake Nyong	-		$\frac{510}{467}$
25- 8-1931	; }	D.S. ,,	Market November		586
25- 8-1934	,,,	U.S. Western Channel	<b>L</b>		562
25- 8-1934	,,	About 500 mts. D.S. Tail of Western Channel			577
25- 8-1934 95- 8-1034	Smill and	R.P. 65			539
25- 8-1934 25- 8-1934	Spill out Jebel	At the offtake, kilo 319	********		<u>29</u>
25- 8-1934		A+ R D 63			474 <b>39</b> 6
	, ,,	At 10.1. 00		i i	(2)

#### Occasional Discharges (contd.).

## (Observed by the Irrigation Department)

T\ _==	River	Site	G.	AUGE	Disch.
DATE	TUIVER	DITE	Reading	Site	n.3 p.s.
		Bahar el Jébel and Tributaries (contd.)			
5- 8-1934	Jebel	Ghabet el Inderab	12 · 15	Gha. Inderab.	443
6-8-1934	<b>,</b> ,	U.S. Head Cut 1	12.06	Head C. No.1	391
6 - 8 <b>-1934</b>	Jebel Zerâf Cut No. 1	Head	$12 \cdot 06$	,,,	94
6-8-1934	${f Jebel}$	U.S. Head Cut No. 2	26.85	,, 2	276
0- 8-1934	Jebel Zerâf Cut No. 2		$26 \cdot 85$	ļ ,,	17
6-8-1934	Peake's Channel.				137
6- 8-1934	$_{ m Jebel}$	About 200 mts. D.S. Tail Peake's Channel	26.85	Head C. No.2	- 397
7 8-1934	,,	U.S. Fell's Channel Head			380
7 - 8-1934	,,	D.S. Head of Fell's Channel			380
7 - 8-1934	,,	R.P. 52			376
7 - 8-1934	,,	,, 51			275
7- 8-1934	,,	, $50$	***		272
7 - 8-1934	,,	., 49			285
7 8-1934	,,	,, 48			256
7 - 8-1934	,•	U.S. Felf's Channel Tail			262
7 - 8-1934	Fell's Channel	Tail			146
7 - 8-1934	${ m Jebel}$	U.S. Gage's Channel	$11 \cdot 02$	Hillet Nuer	404
8 - 8-1934	,,	Adok			357
8 8-1934	,,	R.P. 37		- !	412
8 8-1934	,,	,, 30			400
8 - 8-1934	,,	,, 25			368
9 - 8-1934	,,	,, 19			354
0 8-1934	,,	,, 13		!	352
0 - 8-1934	,,	,, 7	$11 \cdot 30$	Buffalo Cape	326
0 - 8-1934	,,	,, 4			319
0- 8-1934	,,	Kilo 3	14.00	Lake No	304
				1	

P. Phillips,
Director, Hydrological Service.